

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

LEDCOMM LLC,

Plaintiff,

v.

LOWE’S COMPANIES, INC.,
LOWE’S HOME CENTERS, LLC,
Defendants.

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) Civil Action No. 6:20-cv-00722
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) **JURY TRIAL DEMANDED**
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COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff LedComm LLC (“LedComm” or “Plaintiff”), by and through the undersigned counsel, hereby asserts the following claims for patent infringement against Defendants Lowe’s Companies, Inc., and Lowe’s Home Centers, LLC (collectively “Lowe’s” or “Defendants”), and alleges as follows:

SUMMARY

1. LedComm owns by assignment all right, title and interest in numerous United States and foreign patents and applications including United States Patent Nos. 6,803,606, 6,982,522, 7,012,277, 7,154,125, 7,161,190, 7,301,176, 7,490,959, and 8,441,022 (collectively, the “Patents-in-Suit”).

2. Lowe’s infringes the Patents-in-Suit by at least selling, without authorization, LedComm’s proprietary technologies in a number of its commercial products including, *inter alia*, GE lighting products (*e.g.*, GE A19 bulbs; GE Floodlight; GE Brightstik; GE Grow Light; GE Life Bulb; GE Relax BR30; GE Reveal HD Bulb; GE Sleep Bulb; GE Smart Color Bulb; GE Tube

Light; and GE Ultra Bright Par 38, among other substantially similar products) (collectively, the “Accused Products”). These Accused Products are marketed, offered, and distributed throughout the United States, including in this District.

3. By this action, LedComm seeks to obtain compensation for the harm LedComm has suffered as a result of Lowe’s infringement of the Patents-in-Suit.

NATURE OF THE ACTION

4. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

5. Lowe’s has infringed and continues to infringe, and at least as early as the filing and/or service of this Complaint, has induced and continues to induce infringement of, and has contributed to and continues to contribute to infringement of, one or more claims of LedComm’s Patents-in-Suit at least by making, using, selling, and/or offering to sell the Accused Products in the United States, including in this District, and/or by importing the Accused Products into the United States.

6. LedComm is the legal owner by assignment of the Patents-in-Suit, which were duly and legally issued by the United States Patent and Trademark Office (“USPTO”). LedComm seeks monetary damages for Lowe’s infringement of the Patents-in-Suit.

THE PARTIES

7. Plaintiff LedComm is a Texas limited liability company with its principal place of business at 17330 Preston Rd., Dallas, Texas 75252. LedComm is the owner of the intellectual property rights at issue in this action.

8. On information and belief, Defendant Lowe’s Companies, Inc. (“LCI”) is a North Carolina corporation having a principal place of business at 1000 Lowe’s Boulevard, Mooresville,

North Carolina 28117.

9. On information and belief, Defendant Lowe's Home Centers, LLC ("LHC") is a North Carolina company having a principal place of business at 1000 Lowe's Boulevard, Mooresville, North Carolina 28117.

10. On information and belief, Lowe's operates numerous places of business, referred to as "Lowe's Home Improvement" retail stores, throughout the Western District of Texas, including, but not limited to, a "Lowe's Home Improvement" retail store (Lowe's Store #0129) located at 201 N New Rd, Waco, Texas 76710. See <https://www.lowes.com/store/TX-Waco/0129>.

11. On information and belief, LHC, under the control and direction of LCI, and through Lowe's numerous retail stores, directly and/or indirectly distributes, markets, offers to sell, and/or sells the Accused Products in the United States and/or imports the Accused Products into the United States, including in the Western District of Texas, and otherwise directs infringing activities to this District in connection with the Accused Products.

JURISDICTION AND VENUE

12. As this is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 et seq., this Court has subject matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and 1338(a).

13. This Court has personal jurisdiction over Lowe's because Lowe's has (i) availed itself of the rights and benefits of the laws of the State of Texas, (ii) transacted, conducted, and/or solicited business and engaged in a persistent course of conduct in the State of Texas (and in this District), (iii) derived substantial revenue from the sales and/or use of products, such as the Accused Products, in the State of Texas (and in this District), (iv) purposefully directed activities (directly and/or through intermediaries), such as shipping, distributing, offering for sale, selling,

and/or advertising the Accused Products, at residents of the State of Texas (and residents in this District), (v) delivered Accused Products into the stream of commerce with the expectation that the Accused Products will be used and/or purchased by consumers in the State of Texas (and in this District), and (vi) committed acts of patent infringement in the State of Texas (and in this District).

14. Venue is proper in this District under 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. § 1400(b), as Lowe's operates numerous retail stores in this State and District that sell the Accused Products.

PATENTS-IN-SUIT

U.S. Patent No. 6,803,606

15. U.S. Patent No. 6,803,606 (the "'606 Patent") is titled "Light Emitting Device and Manufacturing Method Thereof" and was issued on October 12, 2004. A true and correct copy of the '606 Patent is attached as Exhibit A.

16. The '606 Patent was filed on March 18, 2003 as U.S. Patent Application No. 10/390,180, which in turn claims priority to Japanese Patent Application No. 2002-078119 that was filed on March 20, 2002.

17. LedComm is the owner of all rights, title, and interest in and to the '606 Patent, with the full and exclusive right to bring suit to enforce the '606 Patent, including the right to recover for past infringement.

18. The '606 Patent is valid and enforceable under United States Patent Laws.

19. The '606 Patent recognized problems with existing light emitting devices of the time of the invention of the '606 Patent.

20. For instance, the ‘606 Patent recognized that a traditional light emitting device was prone to malfunction due to poor adherence between the light-emitting device’s constituent parts. *See, e.g.*, ‘606 Patent at 1:24-2:17. In this respect, the ‘606 Patent recognized that a resin disposed between a light emitting element and reflector of the light emitting device adhered poorly to the reflector, which in turn could lead to the reflector detaching from the resin “due to heat generated in mounting the light emitting device or heat generated in operating the light emitting device.” *See id.* at 1:24-31. Such detachment could further result in the destruction of an electrical connection provided by a bonding wire between the light emitting element and electrode of the light emitting device and/or result in creating a space in which water could enter the light emitting device, thereby causing the device to malfunction. *See, e.g., id.* at 1:31-39. 21. In view of the foregoing, the ‘606 Patent sought to “provide a light emitting device capable of preventing detachment of a reflector from a resin.” *Id.* at 1:43-45. In this respect, the ‘606 Patent discloses forming a face of the light emitting device’s reflector into a rough surface, “so that adherence between the reflector and the resin through the rough surface of the reflector becomes relatively larger.” *Id.* at 1:57-61. Advantageously, as a result of this configuration, “the reflector is hardly detached from the resin even if, for example, the light emitting device receives heat during mounting the light emitting device on the substrate or during operating the light emitting device,” which helps to “ensure[] avoidance of such disadvantage as the [light emitting device’s] substrate being detached from the resin, a bonding wire connected to the light emitting element being disconnected due to the detachment of the substrate from the resin, and water entering through a detachment portion between the reflector and the resin, thereby causing malfunction of the light emitting device.” *Id.* at 1:62-2:5.

U.S. Patent No. 6,982,522

21. U.S. Patent No. 6,982,522 (the “’522 Patent”) is titled “LED Device Including Phosphor Layers on the Reflecting Surface” and was issued on January 3, 2006. A true and correct copy of the ‘522 Patent is attached as Exhibit B.

22. The ‘522 Patent was filed on September 23, 2003 as U.S. Patent Application No. 10/667,669, which in turn claims priority to Japanese Patent Application No. 2002-293693 that was filed on October 7, 2002.

23. LedComm is the owner of all rights, title, and interest in and to the ‘522 Patent, with the full and exclusive right to bring suit to enforce the ‘522 Patent, including the right to recover for past infringement.

24. The ‘522 Patent is valid and enforceable under United States Patent Laws.

25. The ‘522 Patent recognized problems with existing light emitting devices of the time of the invention of the ‘522 Patent.

26. For instance, the ‘522 Patent recognized that existing white LED devices (that each include a combination of a blue LED and phosphors emitting red, blue and green lights), “have a low excitation efficiency or a low wavelength conversion efficiency,” resulting in a low luminance. ‘522 Patent at 1:48-54. To solve this problem, the ‘522 Patent recognized that “instead of the blue LED [] emitting light having a blue-region wavelength of 460 nm, it can be devised to use an LED emitting light having a short blue-violet-region wavelength of 430 nm or below to improve the excitation efficiency of the phosphors.” *Id.* at 1:56-60. However, the ‘522 Patent explains that “when the wavelength of the emitting light is changed to an ultraviolet region from the blue-violet-region, even the high-efficiency light-reflecting resin . . . used as the base [] of the LED device [] of the visible light region has a rapidly reduced light reflectance in a short wavelength region,” which also causes a reduction of luminance. *Id.* at 1:61-2:3.

27. In view of the foregoing, the '522 Patent discloses an LED device comprising “a base having a recess with the upper surface opened, the inner wall surface of the recess constituting a reflection surface; a LED chip disposed on the inner bottom of the recess; a resin filled in the recess, the resin including phosphors which absorb a part of light emitted from the LED chip to convert the wavelength thereof and emit light; and a phosphor layer formed on the reflection surface, the phosphor layer including the phosphors.” *Id.* at 2:13-21. In this respect, “when the emitted light from the LED chip reaches the phosphor layer, the phosphors included in the phosphor layer convert the wavelength of the emitted light from the LED chip and emit light,” and thus, “the emitted light can be more effectively converted, enhancing reflection efficiency and luminance.” *Id.* at 2:22-27.

U.S. Patent No. 7,012,277

28. U.S. Patent No. 7,012,277 (the “'277 Patent”) is titled “Semiconductor Light Emitting Device” and was issued on March 14, 2006. A true and correct copy of the '277 Patent is attached as Exhibit C.

29. The '277 Patent was filed on December 23, 2003 as U.S. Patent Application No. 10/745,764, which in turn claims priority to Japanese Patent Application No. 2003-000216 that was filed on January 6, 2003.

30. LedComm is the owner of all rights, title, and interest in and to the '277 Patent, with the full and exclusive right to bring suit to enforce the '277 Patent, including the right to recover for past infringement.

31. The '277 Patent is valid and enforceable under United States Patent Laws. 26. The '277 Patent recognized problems with existing light emitting devices of the time of the invention of the '277 Patent.

32. For instance, the ‘277 Patent recognized that a traditional light emitting device exhibited poor light emitting efficiency, reliability, and lifetime. *See, e.g.*, ‘277 Patent at 1:38-2:37. In this regard, the ‘277 Patent recognized that the amount of current that a light emitting device’s LED chip is subjected to contributes to these deficiencies. *See, e.g.*, ‘277 Patent at 1:38-50.

33. To help address the aforementioned deficiencies, the ‘277 Patent sought to provide a light emitting device that exhibited, at least, favorable light emitting efficiency and lifetime without degrading the reliability the light emitting device’s LED chip. *See, e.g., id.* at 2:32-37. To these ends, the ‘277 Patent discloses a light emitting device configuration in which a metal body is located under a region of a first lead frame on which the light emitting device’s LED chip is mounted and under a region of a second lead frame that is electrically connected to the first lead frame. The ‘277 Patent contemplates that this metal body helps to reduce the negative effects resulting from the LED chip being subjected to current. *See, e.g., id.* at 1:38- 50, 2:32-49.

U.S. Patent No. 7,154,125

34. U.S. Patent No. 7,154,125 (the “‘125 Patent”) is titled “Nitride-Based Semiconductor Light-Emitting Device and Manufacturing Method Thereof” and was issued on December 26, 2006. A true and correct copy of the ‘125 Patent is attached as Exhibit D.

35. The ‘125 Patent was filed on April 23, 2003 as U.S. Patent Application No. 10/422,404, which in turn claims priority to Japanese Patent Application No. 2002-120576 that was filed on April 23, 2002.

36. LedComm is the owner of all rights, title, and interest in and to the ‘125 Patent, with the full and exclusive right to bring suit to enforce the ‘125 Patent, including the right to recover for past infringement.

37. The ‘125 Patent is valid and enforceable under United States Patent Laws.

38. The ‘125 Patent recognized problems with existing light emitting devices of the time of the invention of the ‘125 Patent.

39. For instance, the ‘125 Patent recognized that in conventional nitride-based semiconductor light-emitting devices, “a part of light emitted from [a] InGaN light-emitting layer [] is directed towards [an] Si substrate and absorbed by [the] Si substrate,” which decreases the light extraction efficiency. ‘125 Patent at 1:33-37. According to the ‘125 Patent, although it may be possible to form a reflective film on an Si substrate to “prevent the incidence of light to [the] Si substrate [] and to extract the light from the side surface of the semiconductor light-emitting device in the same manner as that in a device with a sapphire substrate,” “the nitride-based semiconductor layer cannot be formed thick as the difference in thermal expansion coefficient between nitride-based semiconductor layers causes crack[s].” *Id.* at 1:39-47.

40. To help address the aforementioned deficiencies, the ‘125 Patent sought to provide a light emitting device that includes “a reflective layer formed on a support substrate, a p-type nitride based semiconductor layer, a light-emitting layer and an n-type nitride-based semiconductor layer successively formed on the reflective layer, wherein a light extracting surface located above the n-type nitride-based semiconductor layer has irregularities.” *Id.* at 2:13-20. In this respect, “[w]hen the light extracting surface has irregularities, the light can also be extracted to outside, whereby light extraction efficiency can be improved.” *Id.* at 4:4-6.

U.S. Patent No. 7,161,190

41. U.S. Patent No. 7,161,190 (the “‘190 Patent”) is titled “Semiconductor Light-Emitting Device and Method of Manufacturing the Same” and was issued on January 9, 2007. A true and correct copy of the ‘190 Patent is attached as Exhibit E.

42. The ‘190 Patent was filed on August 1, 2005 as U.S. Patent Application No. 11/193,364, which in turn claims priority to Japanese Patent Application No. 2004-225951 that was filed on August 2, 2004.

43. LedComm is the owner of all rights, title, and interest in and to the ‘190 Patent, with the full and exclusive right to bring suit to enforce the ‘190 Patent, including the right to recover for past infringement.

44. The ‘190 Patent is valid and enforceable under United States Patent Laws.

45. The ‘190 Patent recognized problems with existing light emitting devices of the time of the invention of the ‘190 Patent.

46. For instance, the ‘190 Patent recognized that an LED having a high heat dissipation property is required to prevent temperature rises in a device that results in a decrease in optical output. *See e.g.*, ‘190 Patent at 1:21-25. According to the ‘190 Patent, it was common to adopt “a structure in which a submount is provided under the light-emitting element to release heat generated therefrom into a metal package via the submount to improve heat dissipation.” *Id.* at 1:47-51. However, as semiconductor light-emitting devices required extremely high luminous intensity, it became difficult to “attain the required luminous intensity only by improving the conversion efficiency from electricity to light,” and attempts to increase the size of a light-emitting element itself and/or manufacture such a package became impractical. *See, e.g., id.* at 2:3-13.

47. To help address the aforementioned deficiencies, the ‘190 Patent sought to provide a light emitting device that included “a light-emitting element, a first lead frame having a main surface having the light-emitting element mounted thereon, a resin portion for fixing the first lead frame, and a heat-radiating member bonded to a back face of the first lead frame with an electrically-conductive layer containing metal interposed therebetween.” *Id.* at 2:25-31. With this

structure, the heat generated in the light-emitting element is more likely to be transferred to the heat-radiating member via the first lead frame. *See e.g. id.* at 2:32-34.

U.S. Patent No. 7,301,176

48. U.S. Patent No. 7,301,176 (the “‘176 Patent”) is titled “Semiconductor Light Emitting Device and Fabrication Method Thereof” and was issued on November 27, 2007. A true and correct copy of the ‘176 Patent is attached as Exhibit F.

49. The ‘176 Patent was filed on April 22, 2005 as U.S. Patent Application No. 11/112,215 which in turn claims priority to Japanese Patent Application No. 2004-131774 that was filed on April 27, 2004.

50. LedComm is the owner of all rights, title, and interest in and to the ‘176 Patent, with the full and exclusive right to bring suit to enforce the ‘176 Patent, including the right to recover for past infringement.

51. The ‘176 Patent is valid and enforceable under United States Patent Laws.

52. The ‘176 Patent recognized problems with existing light emitting devices of the time of the invention of the ‘176 Patent.

53. For instance, the ‘176 Patent recognized a need for light emitting devices with reduced size but also recognized that simply reducing the size of constituent parts of existing light emitting devices would result in performance deficiencies. *See, e.g.,* ‘176 Patent at 1:57-2:15. For example, the ‘176 Patent recognized that a light emitting device’s light output directivity and/or lead frames’ strength of security could be negatively impacted. *See, e.g., id.*

54. To help address the aforementioned deficiencies, the ‘176 Patent sought to provide a light emitting device with a reduced size that also allowed for adjustment of the directivity of output light and/or ensured the strength of the light emitting device’s lead frames. *See, e.g., id.* at

2:19-25, 3:24-31. To these ends, the ‘176 Patent discloses a light emitting device configuration in which a light transmitting resin provides a holding portion that holds the light emitting device’s lead frames and a light shielding resin is formed to cover a bottom surface and a side surface of the holding portion.

U.S. Patent No. 7,490,959

55. U.S. Patent No. 7,490,959 (the “‘959 Patent”) is titled “Light Emitting Apparatus, Backlight Apparatus, And Electronic Apparatus” and was issued on February 17, 2009. A true and correct copy of the ‘959 Patent is attached as Exhibit G.

56. The ‘959 Patent was filed on December 14, 2006 as U.S. Patent Application No. 11/639,806, which in turn claims priority to Japanese Patent Application No. 2005-363886 that was filed on December 16, 2005.

57. LedComm is the owner of all rights, title, and interest in and to the ‘959 Patent, with the full and exclusive right to bring suit to enforce the ‘959 Patent, including the right to recover for past infringement.

58. The ‘959 Patent is valid and enforceable under United States Patent Laws.

59. The ‘959 Patent recognized problems with existing light emitting devices of the time of the invention of the ‘959 Patent.

60. For instance, in order to "increase a luminance of a plane light-source," the ‘959 Patent recognized a need for “a light emitting apparatus that is thin and small in a radiation angle, in a short-axis direction, of a package, and high in coupling efficiency with respect to a light guiding plate.” ‘959 Patent at 2:21-26, 36-41.

61. In this respect, the ‘959 Patent sought to provide a “light emitting apparatus” comprising “a placement surface that includes an electrode; a light emitter that is placed on the

placement surface; and a transparent sealing resin that seals the light emitter[] and forms a concave surface . . . [where] the light emitter and the electrode being connected via a wire [] is curved in such a way that a top section of the curved wire substantially coincides with a deepest section of the concave surface.” *See e.g. id.* at 2:46-56; *see also, e.g., id.* at Claim 1.

U.S. Patent No. 8,441,022

62. U.S. Patent No. 8,441,022 (the “’022 Patent”) is titled “Semiconductor Light Emitting Device” and was issued on May 14, 2013. A true and correct copy of the ’022 Patent is attached as Exhibit H.

63. The ’022 Patent was filed on May 20, 2011 as U.S. Patent Application No. 13/112,405, which in turn claims priority to Japanese Patent Application No. 2010-117807 that was filed on May 21, 2010.

64. LedComm is the owner of all rights, title, and interest in and to the ’022 Patent, with the full and exclusive right to bring suit to enforce the ’022 Patent, including the right to recover for past infringement.

65. The ’022 Patent is valid and enforceable under United States Patent Laws.

66. The ’022 Patent recognized problems with existing light emitting devices of the time of the invention of the ’022 Patent.

67. For instance, the ’022 Patent recognized that existing LED packages include lead sections that have whole surfaces exposed to an outside resin part of the package to release heat, but the surface areas of the lead sections exposed to the outside of the resin part does not sufficiently release heat. *See e.g.,* ’022 Patent at 2:10-23.

68. To address this problem, the ’022 Patent discloses “a semiconductor light-emitting device, for emitting light to an outside, the semiconductor light-emitting device being mountable

on a substrate, including: at least one semiconductor light-emitting element; a semiconductor element; a first lead frame including a first inner lead and a first outer lead connected to each other, the first inner lead having a surface on which the at least one semiconductor light-emitting element is provided, the first outer lead being connectable to a corresponding electrode of the substrate; a second lead frame including a second inner lead and a second outer lead connected to each other, the second inner lead having a surface on which the semiconductor element is provided, the second outer lead being connectable to a corresponding electrode of the substrate; and a fixing member for fixing the first lead frame and the second lead frame thereto, both the first outer lead connected to the first inner lead penetrating the fixing member and the second outer lead connected to the second inner lead penetrating the fixing member being provided on an outer wall surface of the fixing member, the first outer lead having a surface area greater than that of the second outer lead.”

See e.g., id. at 2:36-57.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 6,803,606

69. LedComm incorporates by reference and re-alleges paragraphs 15-20 of the Complaint as if fully set forth herein.

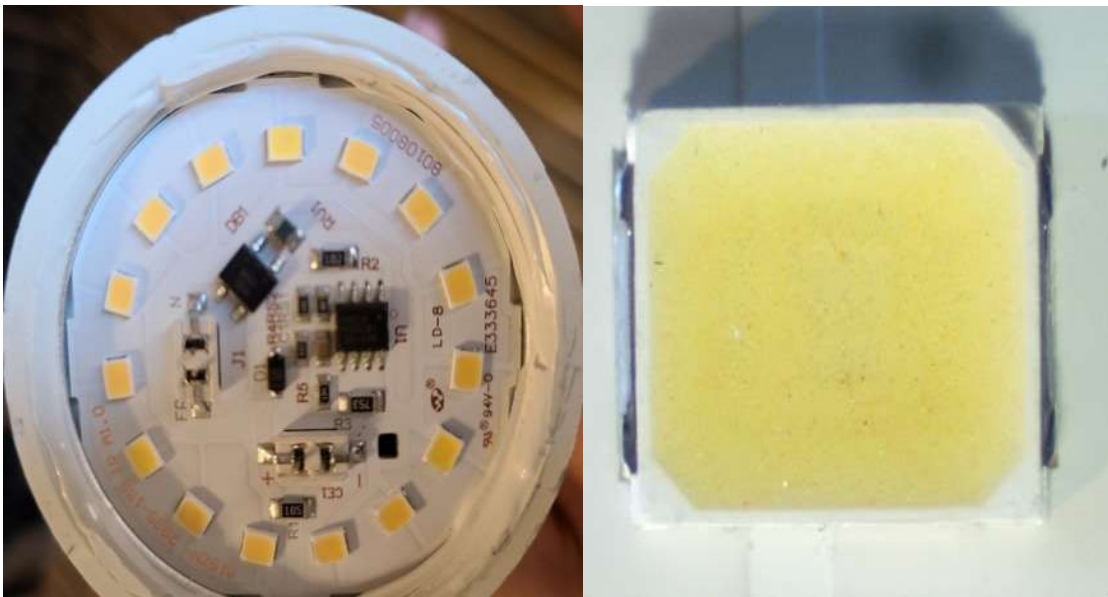
70. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the ‘606 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, GE A19 bulbs; GE Floodlight; GE Brightstik; GE Grow Light; GE Life Bulb; GE Relax BR30; GE Reveal HD Bulb; GE Smart Color Bulb; GE Tube Light; and GE Ultra Bright Par 38, among other substantially similar products) (collectively, the “‘606 Accused Products”).

71. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the '606 Patent in connection with two of the '606 Accused Products (*e.g.*, the GE A19 bulbs and the GE Floodlight). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the '606 Accused Products that it obtains during discovery.

1(a): A light emitting device comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, light emitting devices that are covered by claim 1 of the '606 Patent.

As one non-limiting example, a GE A19 bulb comprises a “light emitting device,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-Classic-60-Watt-EQ-A19-Soft-White-Dimmable-LED-Light-Bulb-4-Pack/1000444647>.

To illustrate, top-down views of an example phosphor LED from a GE A19 bulb are shown below:



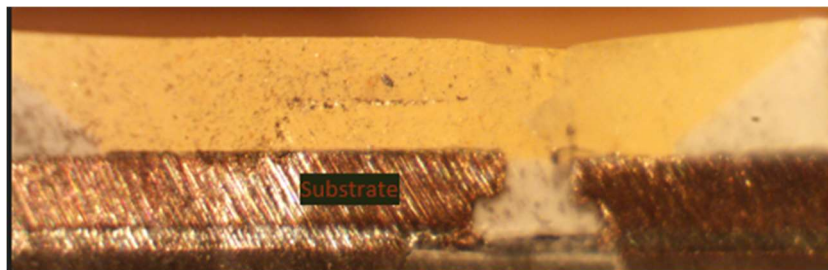
As another non-limiting example, the GE Flood Light comprises a “light emitting device,” as recited in claim 1. See, e.g., <https://www.lowes.com/pd/GE-Basic-90-Watt-EQ-LED-Par38-Warm-White-Flood-Light-Bulb-6-Pack/1000444153>.

To illustrate, a top-down view of an example phosphor LED from a GE Flood Light is shown below:

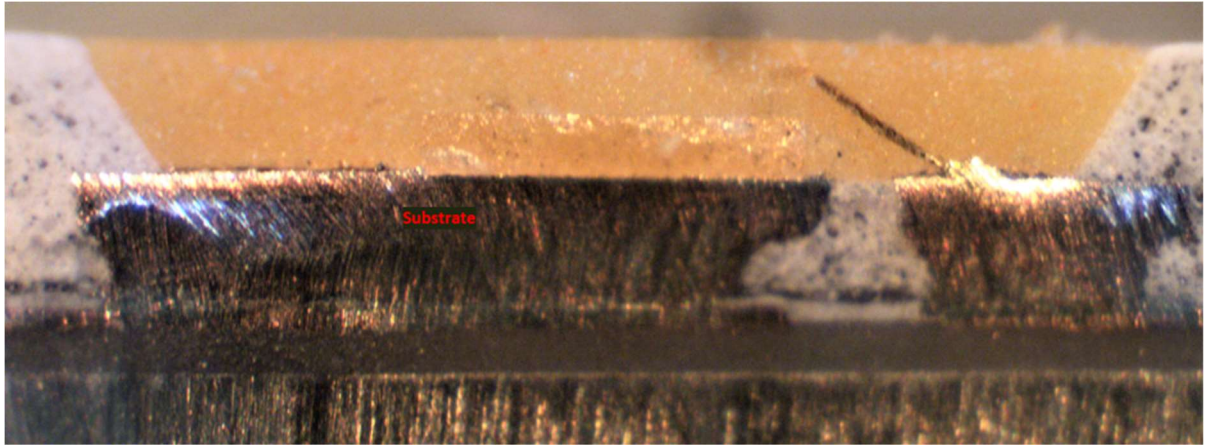


1(b): a substrate;— A GE A19 bulb and the GE Floodlight each comprise a substrate.

For example, shown below is a cross-sectional view of the example phosphor LED from the GE A19 bulb with the substrate annotated in red:



As another example, shown below is a cross-sectional view of an example phosphor LED from the GE Floodlight with the substrate annotated in red:

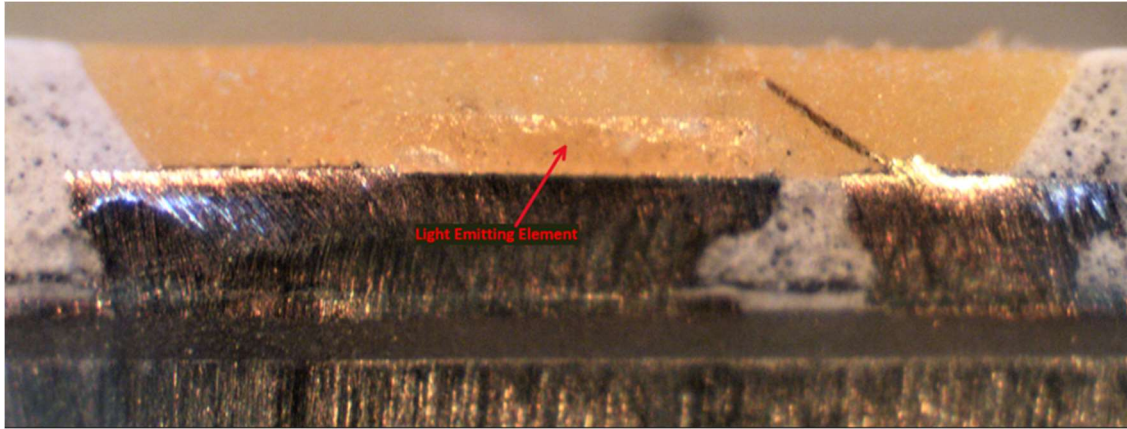


1(c): a light emitting element on the substrate;— A GE A19 bulb and the GE Floodlight each comprise a light emitting element on the substrate.

For example, shown below is the cross-sectional view of the example phosphor LED from the GE A19 bulb with the light emitting element on the substrate identified:

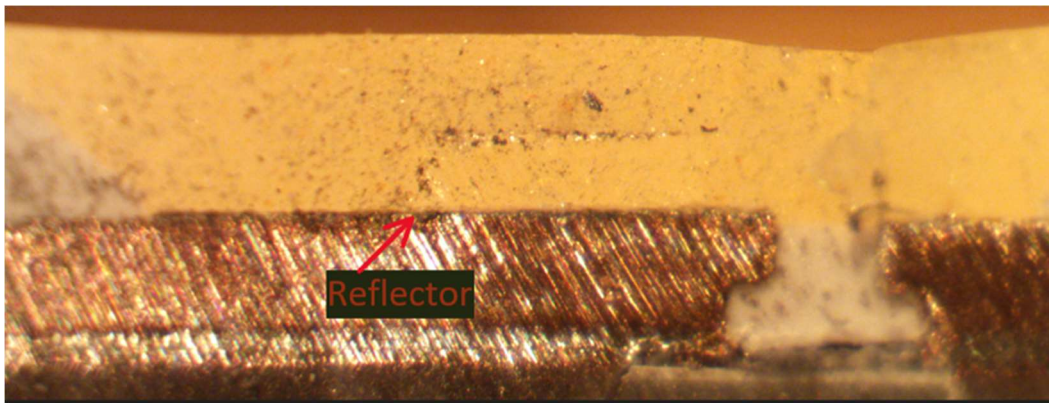


As another example, shown below is the cross-sectional view of the example phosphor LED from the GE Floodlight with the light emitting element on the substrate identified:

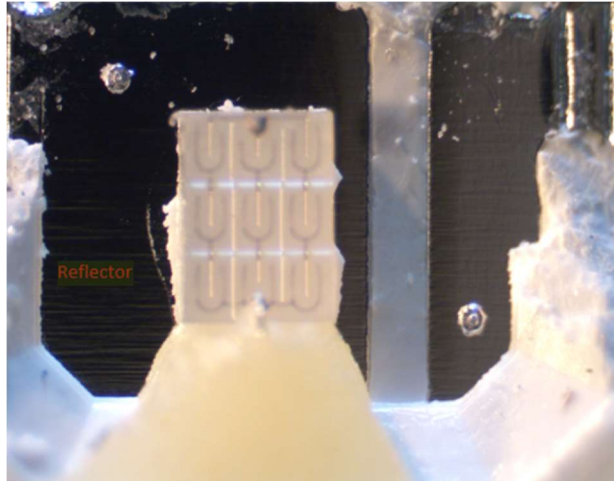


1(d): a reflector on the substrate for reflecting a light beam outgoing from the light emitting element; and— A GE A19 bulb and the GE Floodlight each comprise a reflector on the substrate for reflecting a light beam outgoing from the light emitting element.

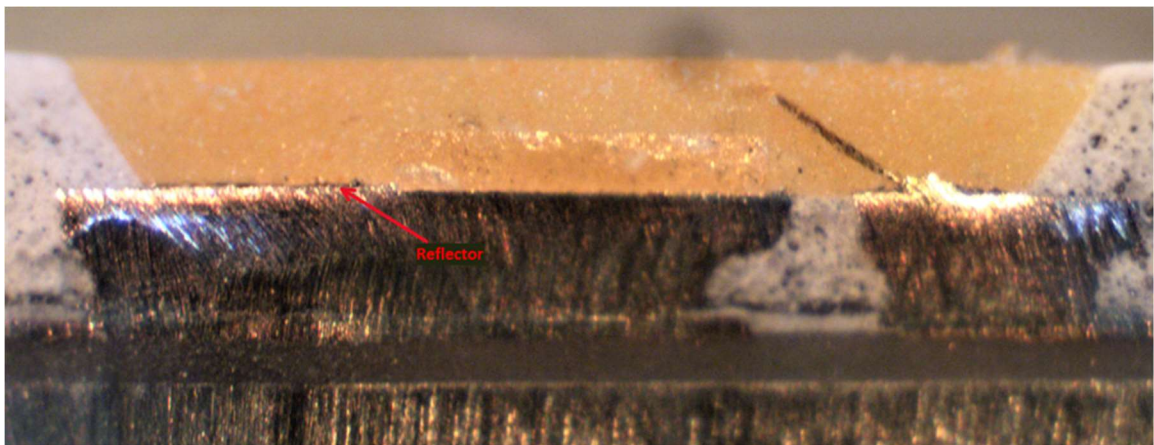
For example, shown below is a close-up of a portion of the cross-sectional view of the example phosphor LED from the GE A19 bulb with the reflector on the substrate identified:



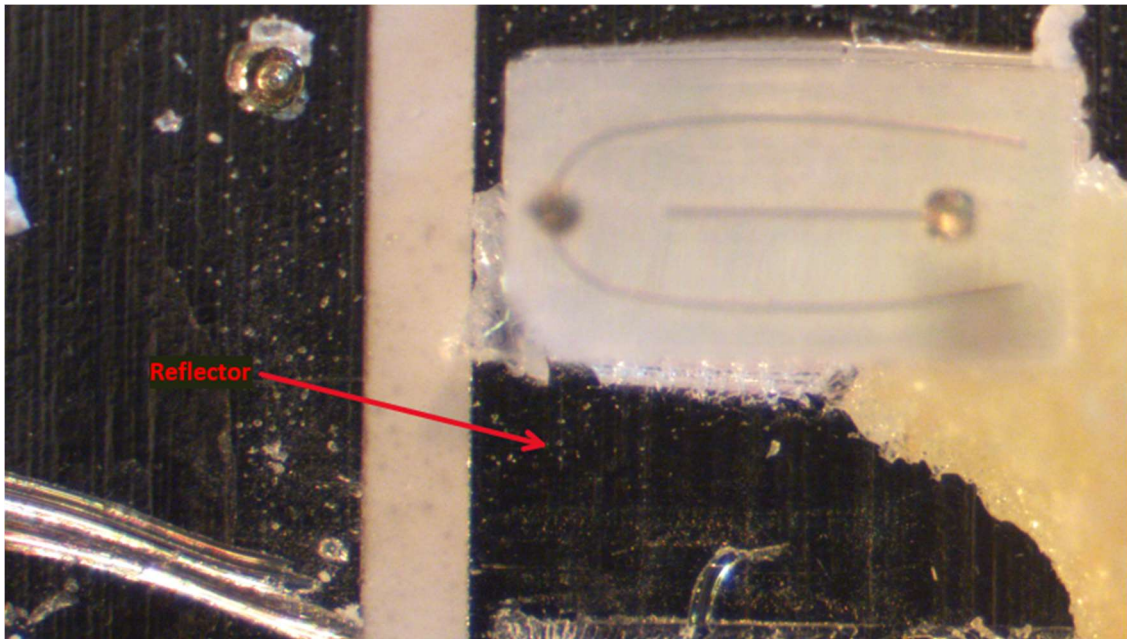
To further illustrate the presence of the reflector on the substrate in the GE A19 bulb, below is a top-down view of a phosphor LED from a GE A19 bulb with the phosphor layer removed and the reflector identified:



As another example, shown below is a close-up of a portion of the cross-sectional view of the example LED from the GE Floodlight with the reflector on the substrate identified:

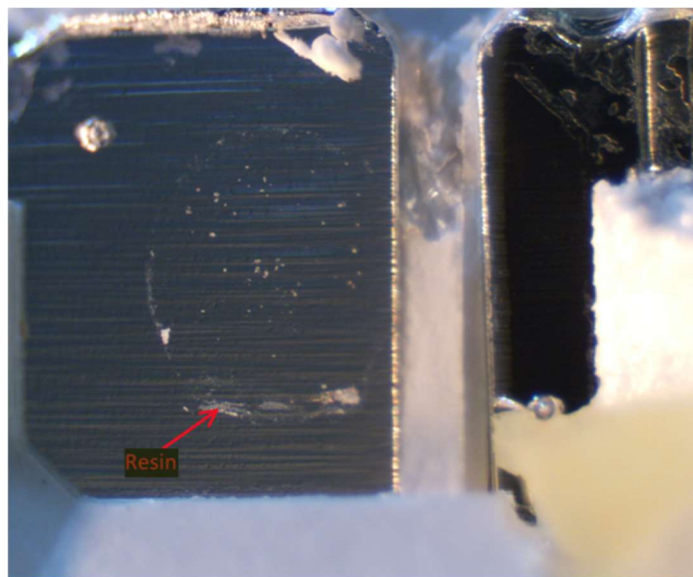


To further illustrate the presence of the reflector on the substrate in the GE Floodlight, below is a top-down view with an example LED from a GE Floodlight removed and the reflector identified:

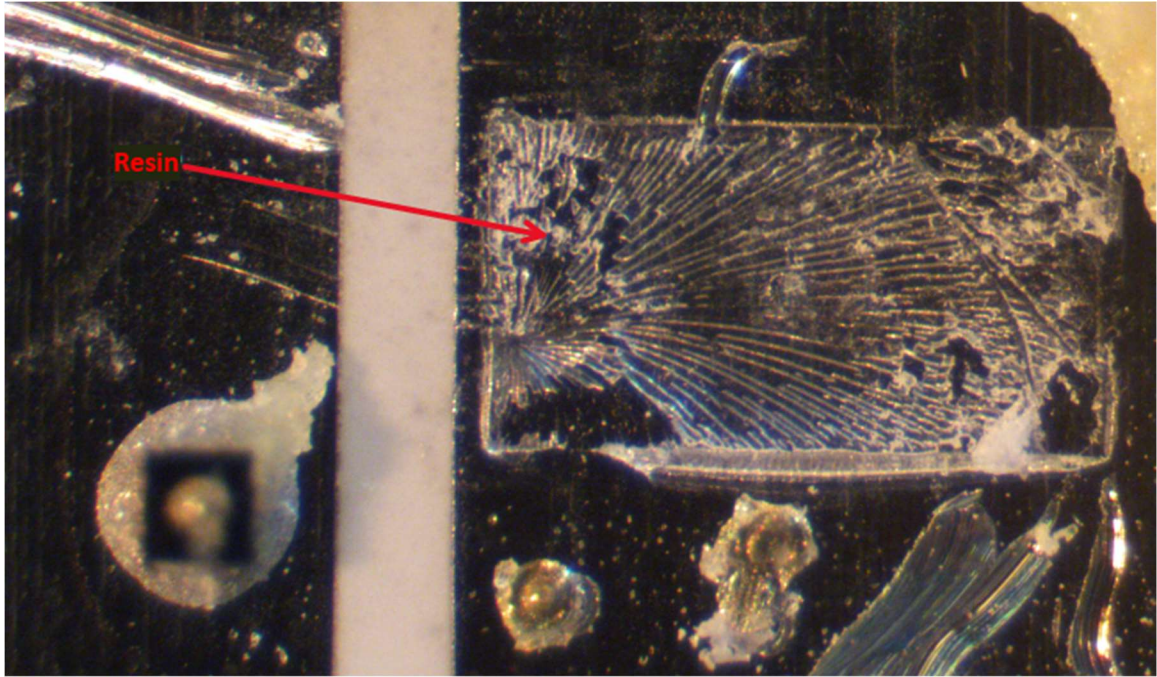


1(e): a resin disposed between the light emitting element and the reflector on the substrate,— A GE A19 bulb and the GE Floodlight each comprise a resin disposed between the light emitting element and the reflector on the substrate.

For example, shown below is the top-down view of the example phosphor LED from the GE A19 bulb with the LED removed and the resin disposed between the light emitting element identified:

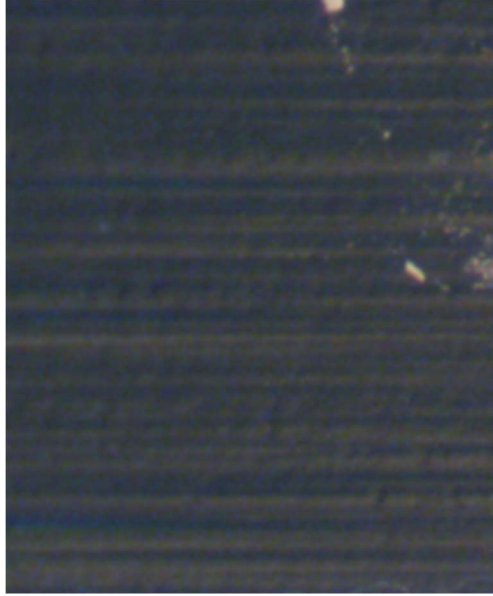


As another example, shown below is a top-down view of the example LED from the GE Floodlight with the LED removed and the resin disposed between the light emitting element identified:

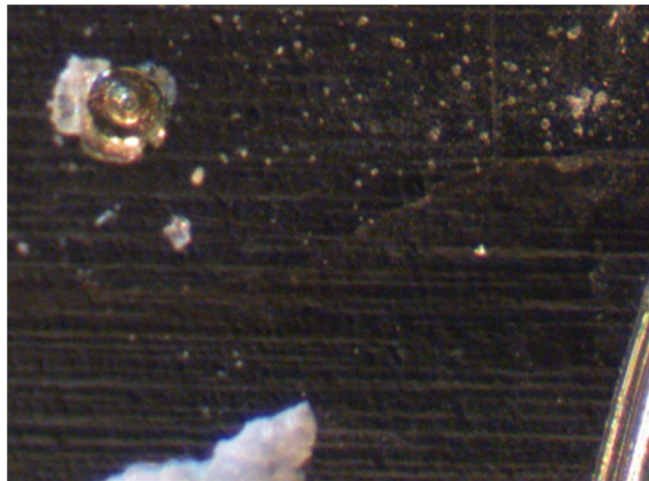


1(f): wherein a face of the reflector on that reflects a light beam outgoing from the light emitting element is formed into a rough surface.— In a GE A19 bulb and the GE Floodlight, a face of the reflector that reflects a light beam outgoing from the light emitting element is formed into a rough surface.

For example, a face of the reflector formed into a rough surface is shown in the below image of a GE A19 bulb's reflector that is visible after the phosphor layer has been removed:



As another example, a face of the reflector formed into a rough surface is shown in the below image of a GE Floodlight's reflector:



72. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '606 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '606 Patent under 35 U.S.C. § 271(c).

73. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '606 Patent while being on notice of (or willfully blind to) the '606 Patent. For instance, Defendants have supplied

and continue to supply the '606 Accused Products to customers (*e.g.*, end users and/or distributors of the GE A19 bulb and/or GE Floodlight) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '606 Patent.

74. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '606 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the '606 Accused Products and uses of the '606 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-Classic-60-Watt-EQ-A19-Soft-White-Dimmable-LED-Light-Bulb-4-Pack/1000444647>; <https://www.lowes.com/pd/GE-Basic-90-Watt-EQ-LED-Par38-Warm-White-Flood-Light-Bulb-6-Pack/1000444153>.

75. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '606 Patent. For instance, Defendants know (and/or have known) of the existence of the '606 Patent or at least should have known of the existence of the '606 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '606 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '606 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '606 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '606 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '606 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

76. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '606 Patent by offering for sale, selling, and/or importing one or more components in connection with the '606 Accused Products that contribute to the direct infringement of the '606 Patent by customers of the '606 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '606 Patent or were willfully blind to its existence since at least as early as the filing and/or service of the Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the '606 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '606 Patent. Defendants have supplied (and/or continues to supply) the '606 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '606 Patent by using the '606 Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

77. At least as early as the filing and/or service of the Complaint, Defendants' infringement of the '606 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

78. Additional allegations regarding Defendants' knowledge of the '606 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

79. Defendants' infringement of the '606 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

80. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '606 Patent.

81. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants' infringement of the '606 Patent, including, without limitation, a reasonable royalty.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 6,982,522

82. LedComm incorporates by reference and re-alleges paragraphs 21-27 of the Complaint as if fully set forth herein.

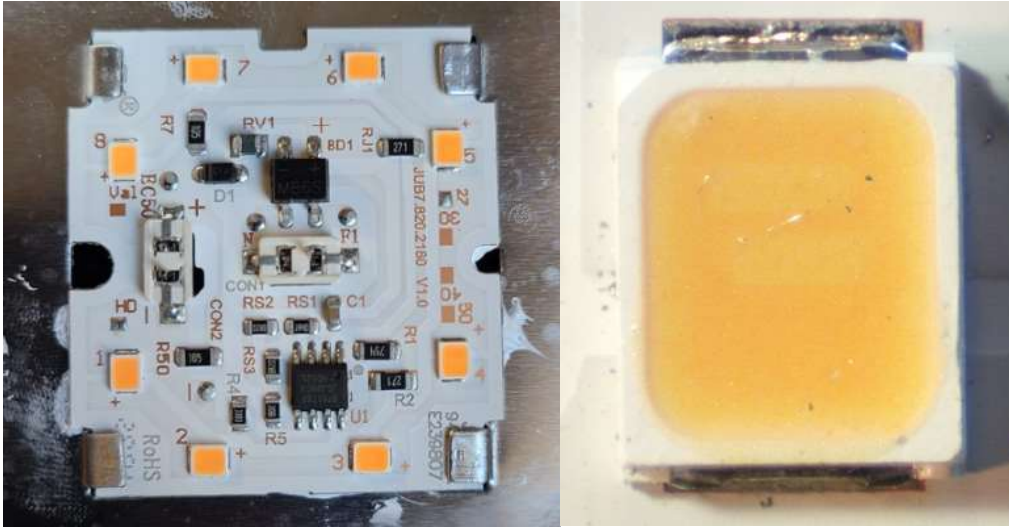
83. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the '522 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, the GE Relax BR30 bulb and the GE Reveal HD Bulb, among other substantially similar products) (collectively, the "'522 Accused Products").

84. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the '522 Patent in connection with two of the Accused Products (*e.g.*, the GE Relax BR30 bulb and the GE Reveal HD bulb). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the '522 Accused Products that it obtains during discovery.

1(a): A LED device, comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, LED devices that are covered by claim 1 of the '522 Patent.

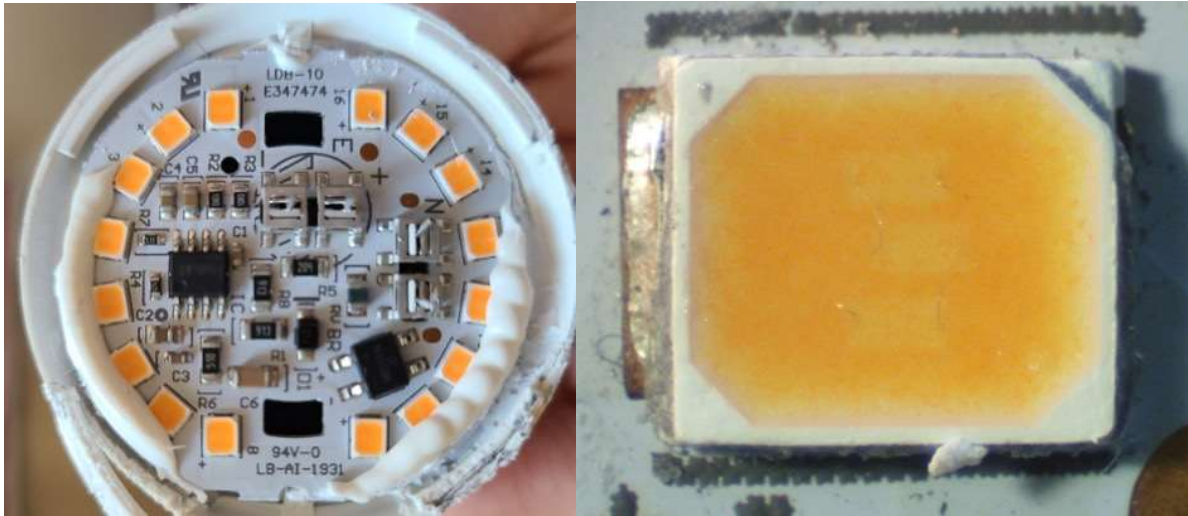
As one non-limiting example, the GE Relax BR30 bulb comprises a “light emitting device,” as recited in claim 1. *See, e.g.,* <https://www.lowes.com/pd/GE-Relax-65-Watt-EQ-LED-BR30-Soft-White-Dimmable-Flood-Light-Bulb-2-Pack/1000445087>.

To illustrate, top-down views of an example phosphor LED from a GE Relax BR30 bulb are shown below:



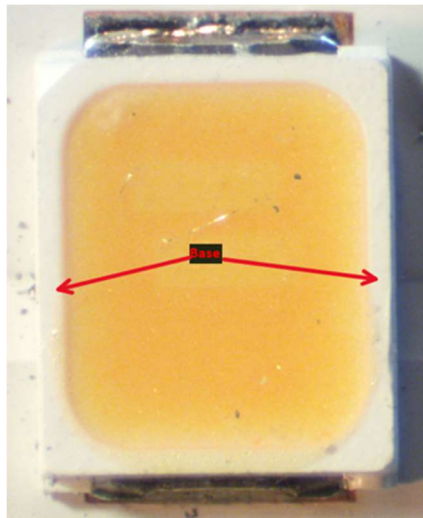
As another non-limiting example, the GE Reveal HD bulb comprises a “light emitting device,” as recited in claim 1. *See, e.g.,* <https://www.lowes.com/pd/GE-Reveal-Watt-EQ-A21-Color-enhancing-3-Way-Bulb-Dimmable-LED-Light-Bulb/1000445047>.

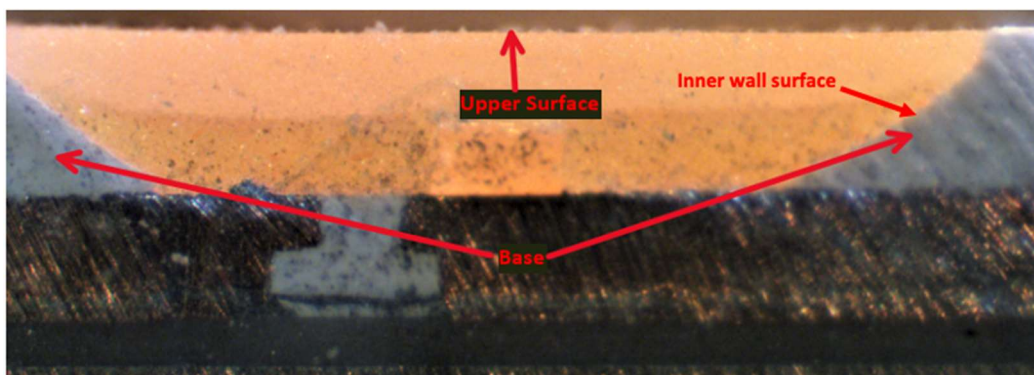
To illustrate, top-down views of an example phosphor LED from a GE Reveal HB bulb are shown below:



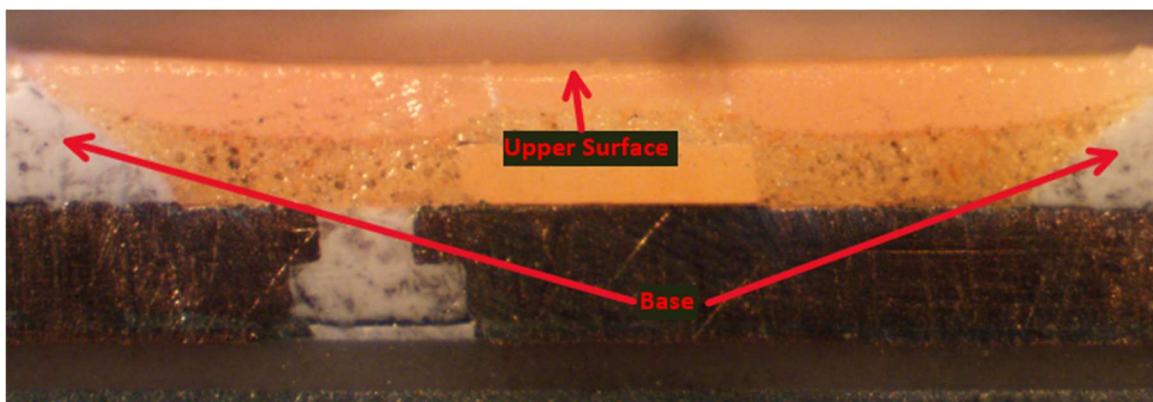
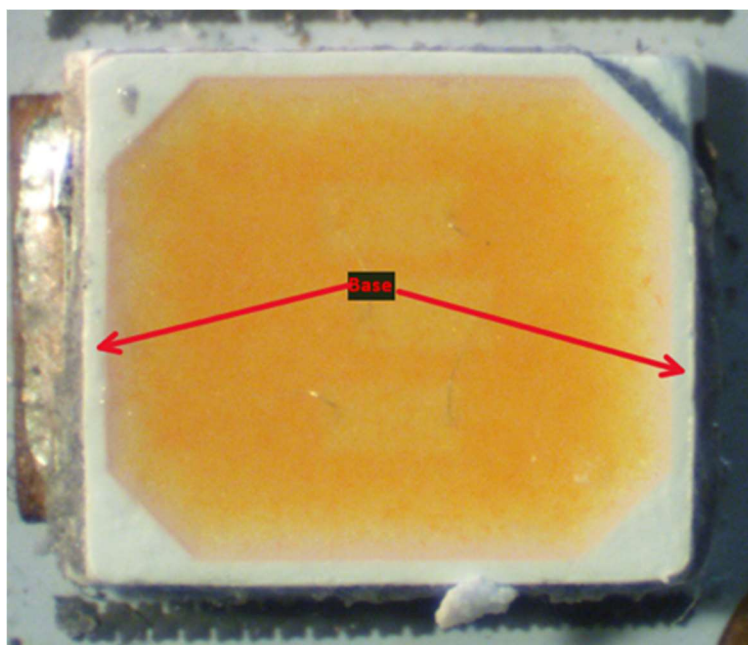
1(b): a base having a recess with the upper surface opened , the inner wall surface of the recess constituting a reflection surface;— The GE Relax BR30 bulb and GE Reveal HD bulb each comprise a base having a recess with the upper surface opened, the inner wall surface of the recess constituting a reflection surface.

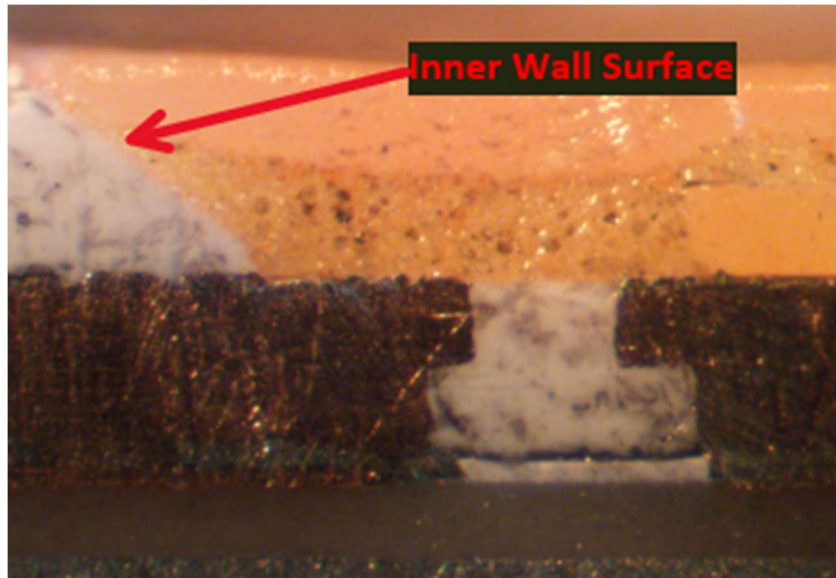
For example, shown below are top-down and cross-sectional views of the example phosphor LED from the GE Relax BR30 bulb identifying a base with the upper surface opened, and the inner wall surface of the recess constituting a reflection surface identified in red:





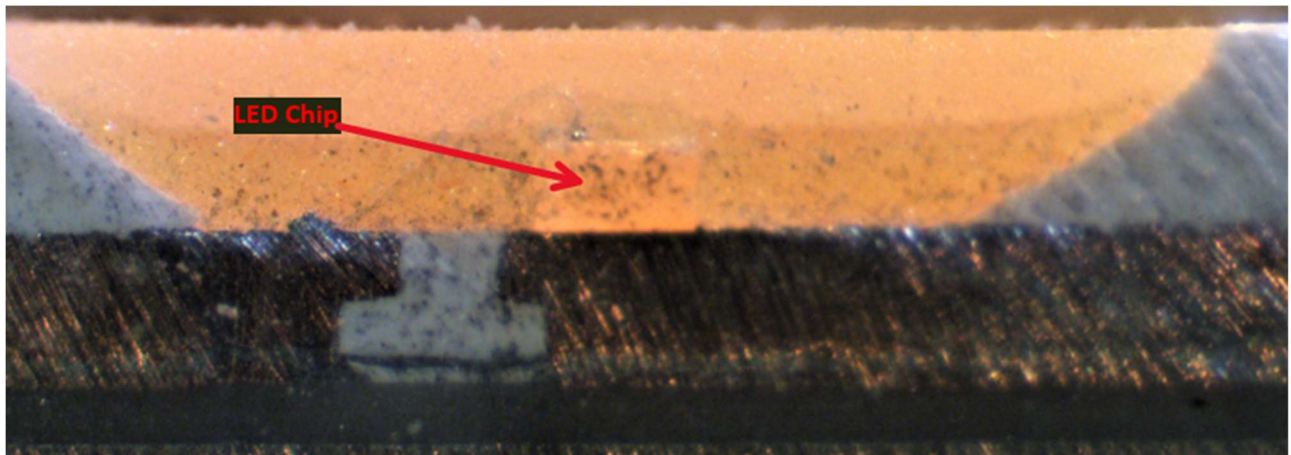
As another example, shown below are top-down and cross-sectional views of the example phosphor LED from the GE Reveal HD bulb identifying a base with the upper surface opened, and the inner wall surface of the recess constituting a reflection surface identified in red:



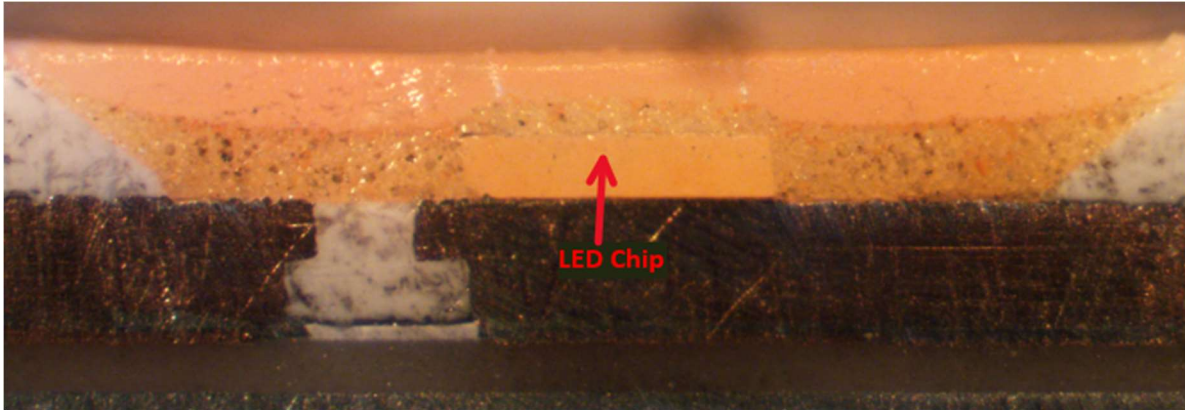


1(c): a LED chip disposed on the inner bottom of the recess;— The GE Relax BR30 bulb and GE Reveal HD bulb each comprise a LED chip disposed on the inner bottom of the recess.

For example, shown below is the cross-sectional view of the example phosphor LED from the GE Relax BR30 bulb with the LED chip identified:

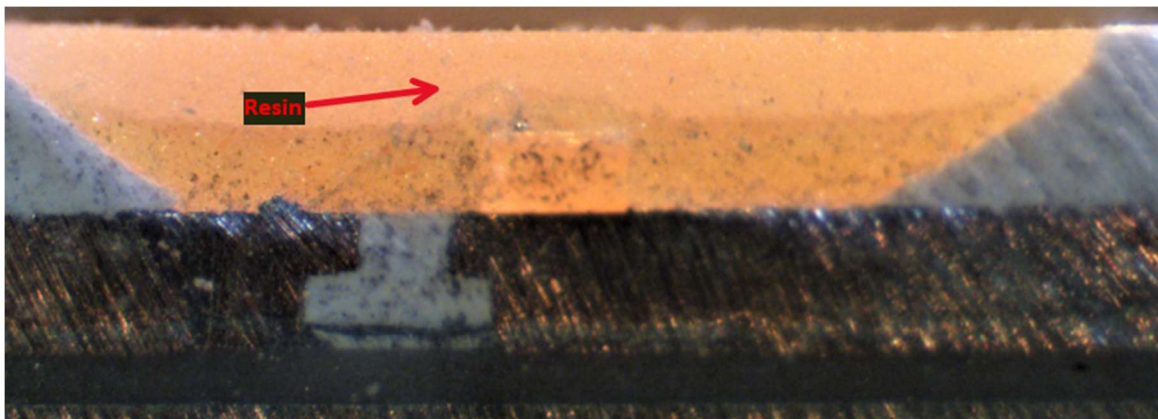


As another example, shown below is the cross-sectional view of the example phosphor LED from the GE Reveal HD bulb with the LED chip identified:

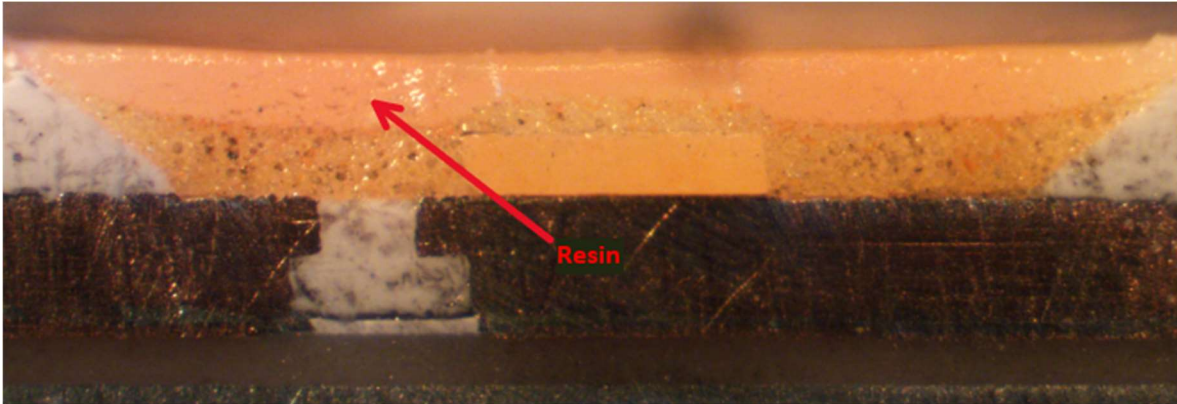


1(d): a resin filled in the recess, the resin including phosphors which absorb a part of light emitted from the LED chip to convert the wavelength thereof and emit light; — The GE Relax BR30 bulb and GE Reveal HD bulb each comprise a resin filled in the recess, the resin including phosphors which absorb a part of light emitted from the LED chip to convert the wavelength thereof and emit light.

For example, shown below is a close-up of a portion of the cross-sectional view of the example phosphor LED from the GE Relax BR30 bulb with the resin identified:

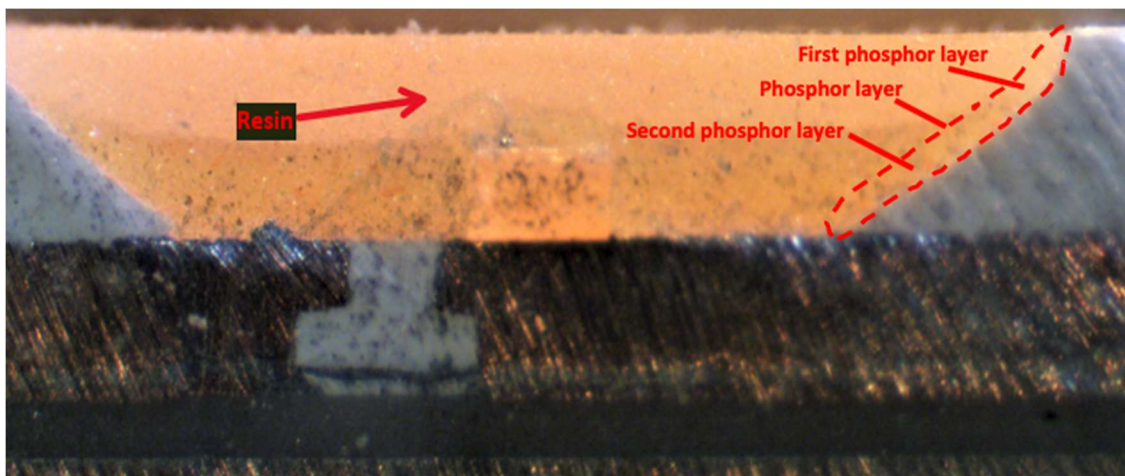


As another example, shown below is a close-up of a portion of the cross-sectional view of the example LED from the GE Reveal HD bulb with the resin identified:



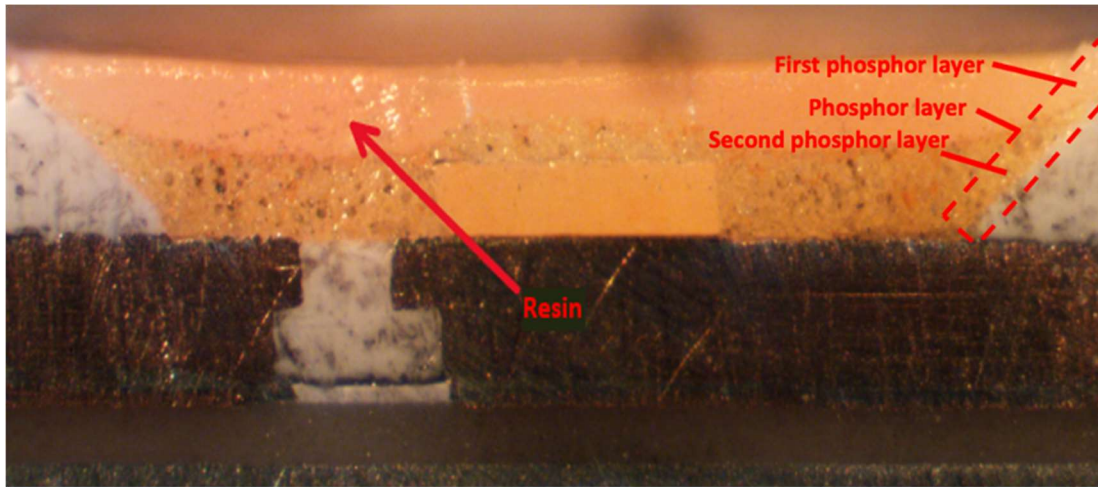
1(e): a phosphor layer formed on the reflection surface, the phosphor layer including the phosphors, wherein the phosphor layer comprises a plurality of phosphor layers each of which is excited to emit a different wavelength of light from each other,— The GE Relax BR30 bulb and GE Reveal HD bulb each comprise a phosphor layer formed on the reflection surface, the phosphor layer including the phosphors, wherein the phosphor layer comprises a plurality of phosphor layers each of which is excited to emit a different wavelength of light from each other.

For example, shown below is a cross-sectional view of the example phosphor LED from the GE Relax BR30 bulb with the phosphor layer formed on the reflection surface identified:



As shown above, the phosphor layer comprises a plurality of phosphor layers (*e.g.*, a first phosphor layer and a second phosphor layer) each of which is excited to emit a different wavelength of light from each other.

As another example, shown below is a cross-sectional view of the example LED from the GE Reveal HD bulb with the phosphor layer formed on the reflection surface identified:



As shown above, the phosphor layer comprises a plurality of phosphor layers (*e.g.*, a first phosphor layer and a second phosphor layer) each of which is excited to emit a different wavelength of light from each other.

85. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '522 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '522 Patent under 35 U.S.C. § 271(c).

86. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '522 Patent while being on notice of (or willfully blind to) the '522 Patent. For instance, Defendants have supplied and continue to supply the '522 Accused Products to customers (*e.g.*, end users and/or distributors of the GE Relax BR30 bulb and/or GE Reveal HD bulb) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '522 Patent.

87. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '522 Patent. As

one example, Defendants promote, advertise, and instruct customers or potential customers about the '522 Accused Products and uses of the '522 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-Relax-65-Watt-EQ-LED-BR30-Soft-White-Dimmable-Flood-Light-Bulb-2-Pack/1000445087>; <https://www.lowes.com/pd/GE-Reveal-Watt-EQ-A21-Color-enhancing-3-Way-Bulb-Dimmable-LED-Light-Bulb/1000445047>.

88. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '522 Patent. For instance, Defendants know (and/or have known) of the existence of the '522 Patent or at least should have known of the existence of the '522 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '522 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '522 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '522 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '522 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '522 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

89. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '522 Patent by offering for sale, selling, and/or importing one or more components in connection with the '522 Accused Products that contribute to the direct infringement of the '522 Patent by customers of the '522 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '522 Patent or were willfully blind to

its existence since at least as early as the filing and/or service of the Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '522 Patent. Defendants have supplied (and/or continues to supply) the '522 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '522 Patent by using the '522 Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

90. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '522 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

91. Additional allegations regarding Defendants' knowledge of the '522 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

92. Defendants' infringement of the '522 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

93. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '522 Patent.

94. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants' infringement of the '522 Patent, including, without limitation, a reasonable royalty.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 7,012,277

95. LedComm incorporates by reference and re-alleges paragraphs 28-33 of the Complaint as if fully set forth herein.

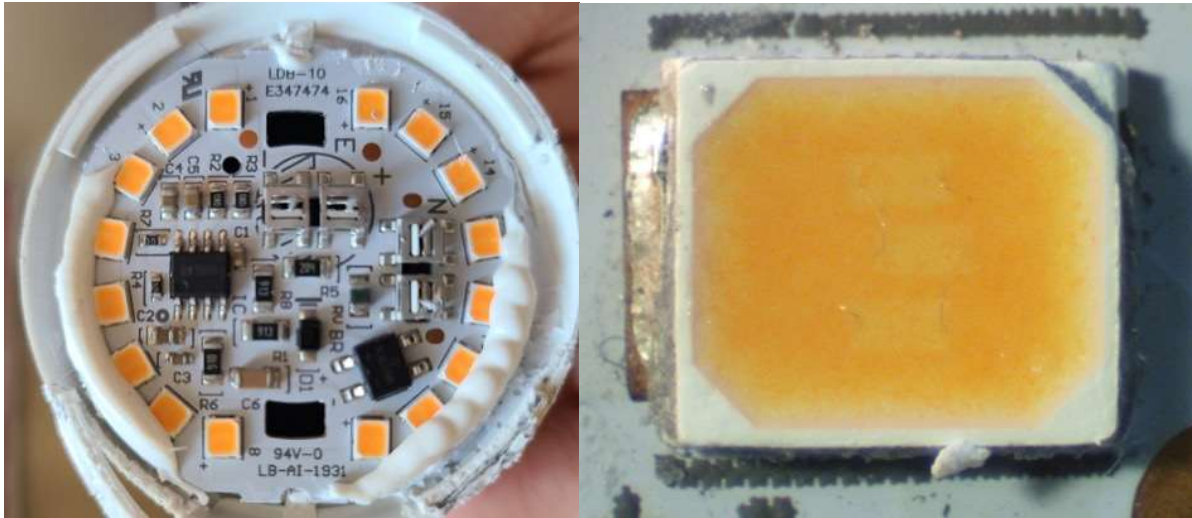
96. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the ‘277 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, GE A19 bulbs; GE Floodlight; GE Brightstik; GE Grow Light; GE Life Bulb; GE Relax BR30; GE Reveal HD Bulb; GE Smart Color Bulb; GE Tube Light; and GE Ultra Bright Par 38, among other substantially similar products) (collectively, the “‘277 Accused Products”).

97. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the ‘277 Patent in connection with two of the ‘277 Accused Products (*e.g.*, the GE Brightstik and GE Grow Light). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the ‘277 Accused Products that it obtains during discovery.

1(a): A semiconductor light emitting device comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, semiconductor light emitting devices that are covered by claim 1 of the ‘277 Patent.

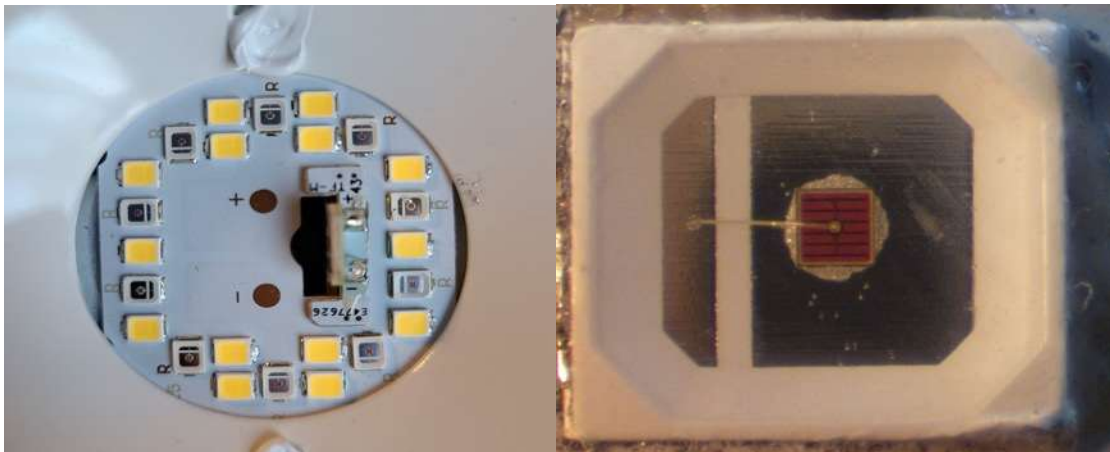
As one non-limiting example, the GE Brightstik comprises a “semiconductor light emitting device,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-Bright-Stik-40-Watt-EQ-Daylight-LED-Light-Bulb-3-Pack/1000974570>.

To illustrate, top-down views of an example phosphor LED chip from a GE Brightstik are shown in the images below:



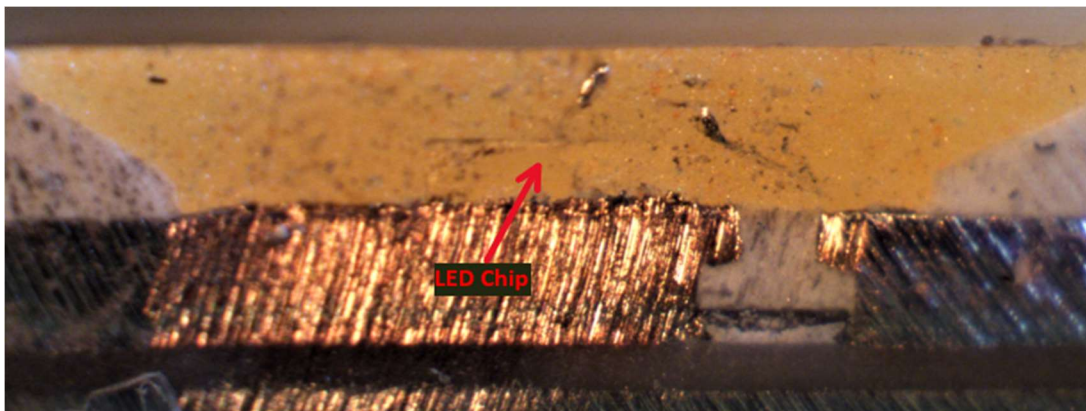
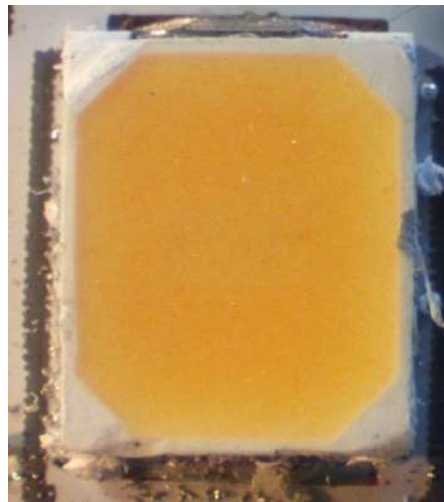
As another non-limiting example, the GE Grow Light comprises a “semiconductor light emitting device,” as recited in claim 1. See, e.g., <https://www.lowes.com/pd/GE-4-75-in-1-Light-White-9-Watt-Br30-LED-Grow-Light/1001062847>.

To illustrate, top-down views of an example multiple color LED chip from a GE Grow Light are shown below:

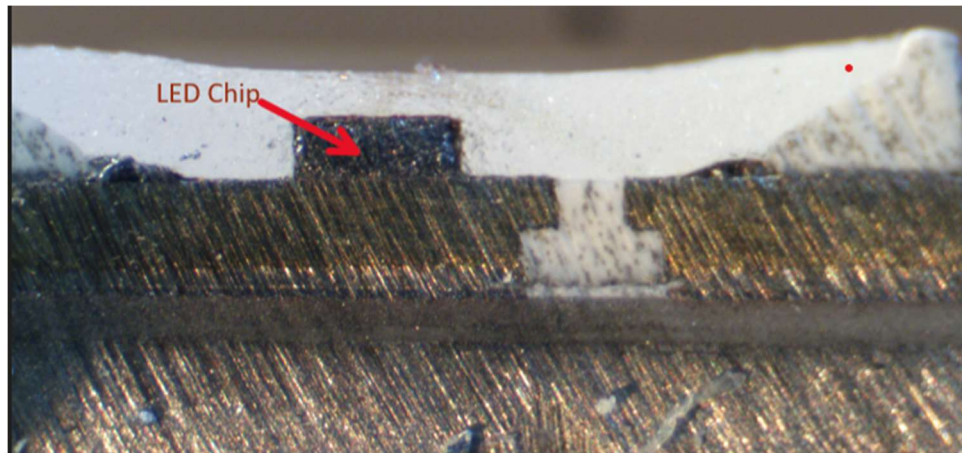


1(b): an LED chip;— The GE Brightstik and GE Grow Light each comprise an LED chip.

For example, shown below are a top-down view and a cross-sectional view of the example phosphor LED from the GE Brightstik, respectively:

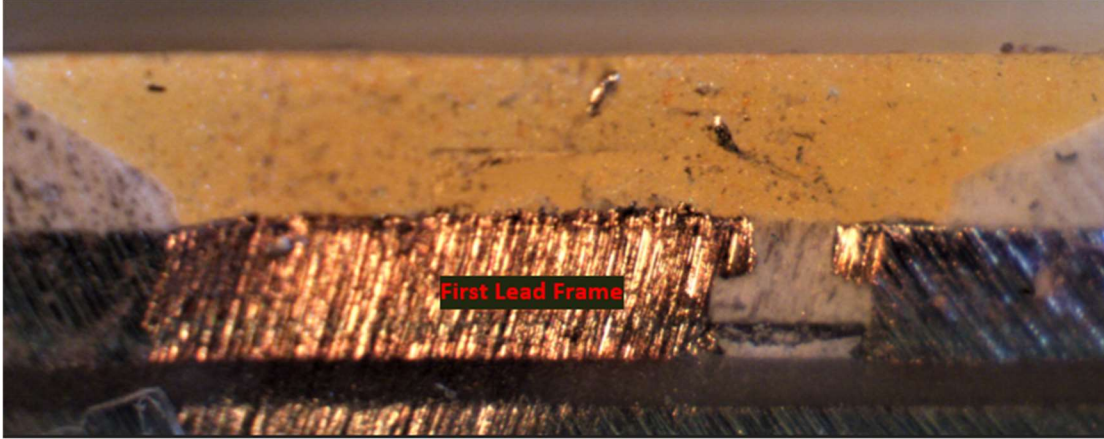


As another example, shown below are a top-down view and a cross-sectional view of the multiple color LED from the GE Grow Light, respectively:

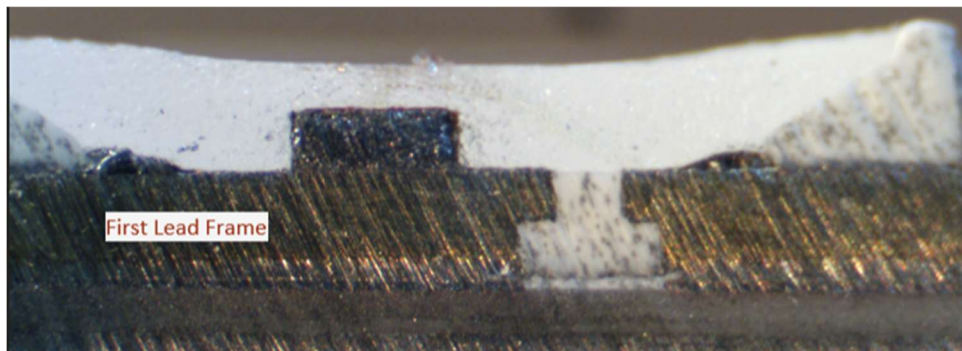


1(c): a first lead frame on which said LED chip is mounted;— The GE Brightstik and GE Grow Light bulb each comprise a first lead frame on which said LED chip is mounted.

For example, shown below is a resulting cross-sectional view of the one cross-sectioned LED chip from the GE Brightstik with the one cross-sectioned phosphorus LED chip mounted to a first lead frame identified:

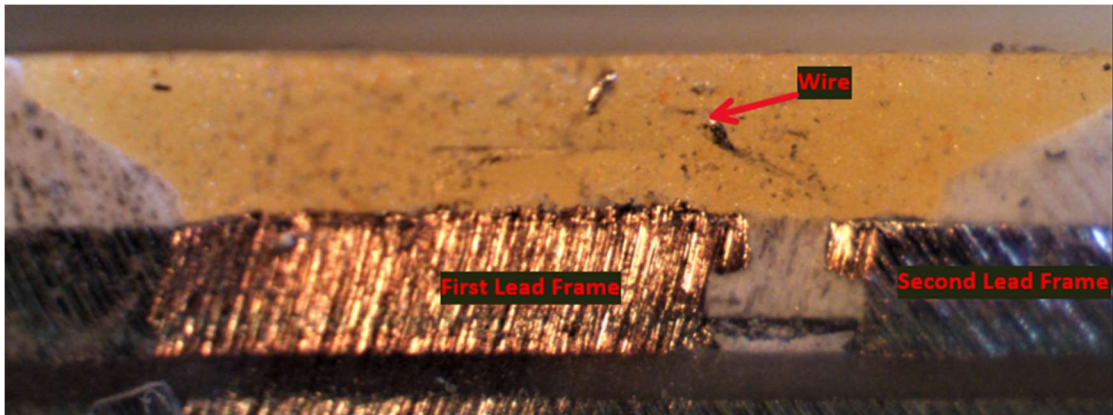


As another example, shown below is a resulting cross-sectional view of the one cross-sectioned LED chip from the GE Grow Light with the one cross-sectioned color LED chip mounted to a first lead frame identified:

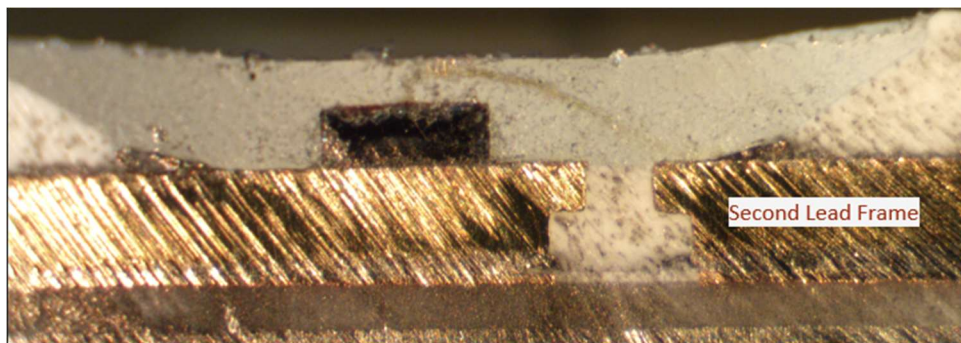
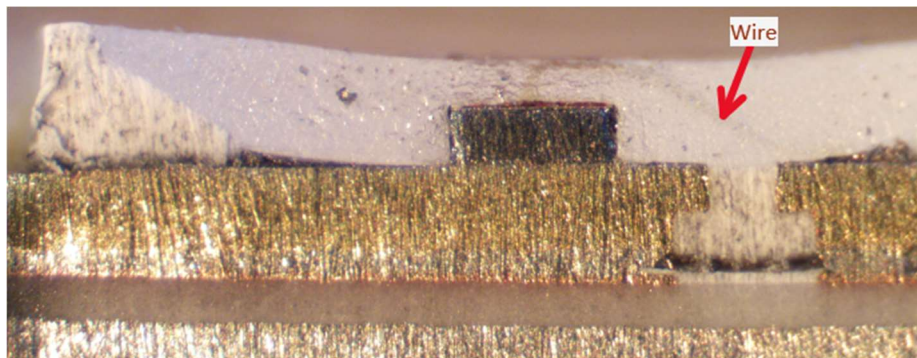


1(d): a second lead frame electrically connected to said LED chip via a wire, and — The GE Brightstik and GE Grow Light each comprises a second lead frame that is electrically connected to the LED chip via a wire .

For example, shown below is the cross-sectional view of the cross-sectioned phosphor LED chip from the GE Brightstik with a second lead frame electrically connected to the first lead frame via a wire identified:

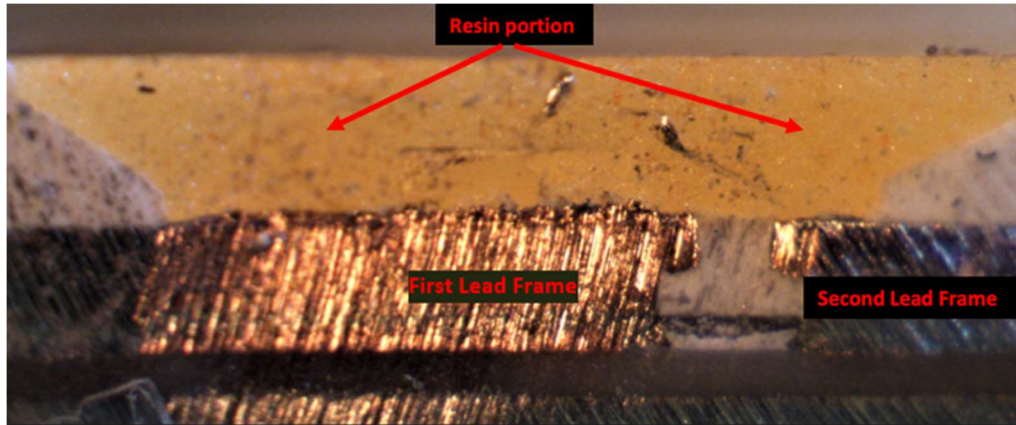


As another example, shown below are cross-sectional views of the cross-sectioned color LED chip from the GE Grow Light with a second lead frame electrically connected to the first lead frame via a wire identified:

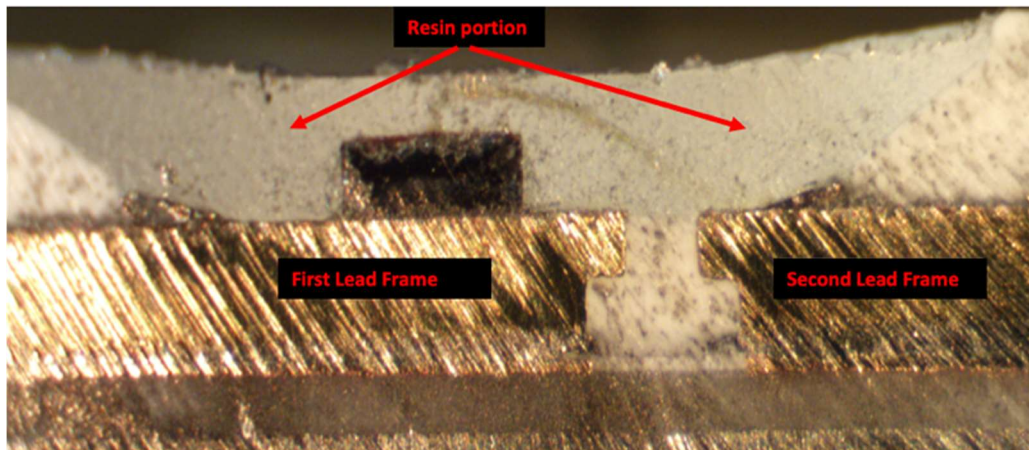


1(e): a resin portion surrounding a circumference of said LED chip, and fastening said first and second lead frames,— The GE Brightstik and GE Grow Light each comprises a resin portion surrounding the circumference of the LED chip and fastening the first and second lead frames.

For example, shown below is a cross-sectional view of a cross-sectioned phosphor LED chip from the GE Brightstik with a resin portion surrounding the circumference of the color LED chip and fastening first and second lead frames identified:



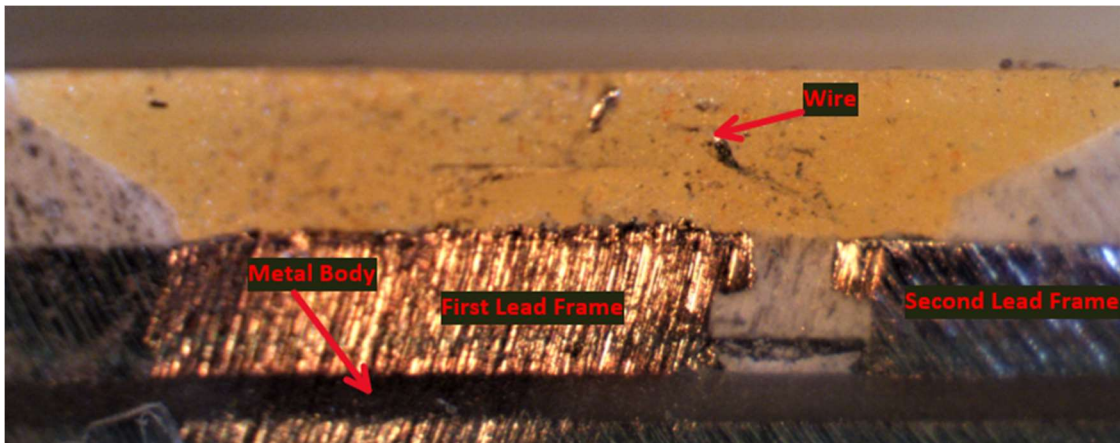
As another example, shown below is a cross-sectional view of a color LED chip from a GE Grow Light with a resin portion surrounding the circumference of the LED chip and fastening first and second lead frames identified:



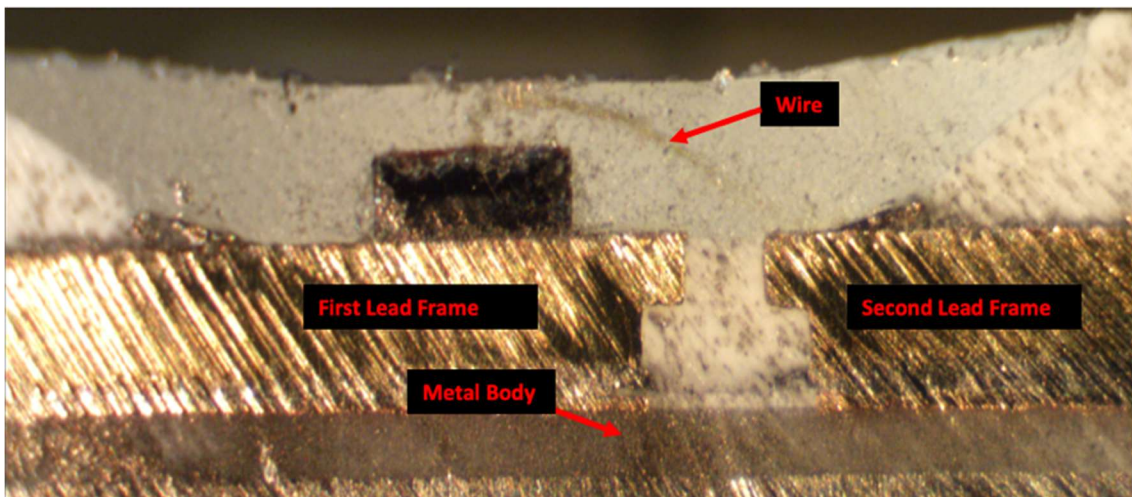
1(f): wherein a metal body is located under a region of said first lead frame where said LED chip is mounted, and wherein the second lead frame has a portion where the wire is connected and the metal body is provided to extend to a region below said portion of the second lead frame.— In the GE Brightstik and GE Grow Light, a metal body is located under a region of the first lead frame where the LED chip is mounted and the second lead frame has a portion where

the wire is connected and the metal body is provided to extend to a region below the portion of the second lead frame.

For example, this configuration is shown in the below cross-sectional view of a cross-sectioned phosphor LED chip from the GE Brightstik:



As another example, this configuration is shown in the below cross-sectional view of a cross-sectioned color LED chip from the GE Grow Light:



98. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '277 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '277 Patent under 35 U.S.C. § 271(c).

99. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '277 Patent while being on notice of (or willfully blind to) the '277 Patent. For instance, Defendants have supplied and continue to supply the '277 Accused Products to customers (*e.g.*, end users and/or distributors of the '277 Accused Products) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '277 Patent.

100. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '277 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the '277 Accused Products and uses of the '277 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-Bright-Stik-40-Watt-EQ-Daylight-LED-Light-Bulb-3-Pack/1000974570>; <https://www.lowes.com/pd/GE-4-75-in-1-Light-White-9-Watt-Br30-LED-Grow-Light/1001062844>.

101. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '277 Patent. For instance, Defendants know (and/or have known) of the existence of the '277 Patent or at least should have known of the existence of the '277 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '277 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '277 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '277 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct

infringement of one or more claims of the '277 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '277 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

102. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '277 Patent by offering for sale, selling, and/or importing one or more components in connection with the '277 Accused Products that contribute to the direct infringement of the '277 Patent by customers of the '277 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '277 Patent or were willfully blind to its existence since at least as early as the filing and/or service of this Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the '277 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '277 Patent. Defendants have supplied (and/or continues to supply) the '277 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '277 Patent by using the '277 Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

103. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '277 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

104. Additional allegations regarding Defendants' knowledge of the '277 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

105. Defendants’ infringement of the ‘277 Patent is exceptional and entitles LedComm to attorneys’ fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

106. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the ‘277 Patent.

107. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants’ infringement of the ‘277 Patent, including, without limitation, a reasonable royalty.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 7,154,125

108. LedComm incorporates by reference and re-alleges paragraphs 34-40 of the Complaint as if fully set forth herein.

109. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the ‘125 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.* the GE Grow Light, among other substantially similar products) (collectively, the “‘125 Accused Products”).

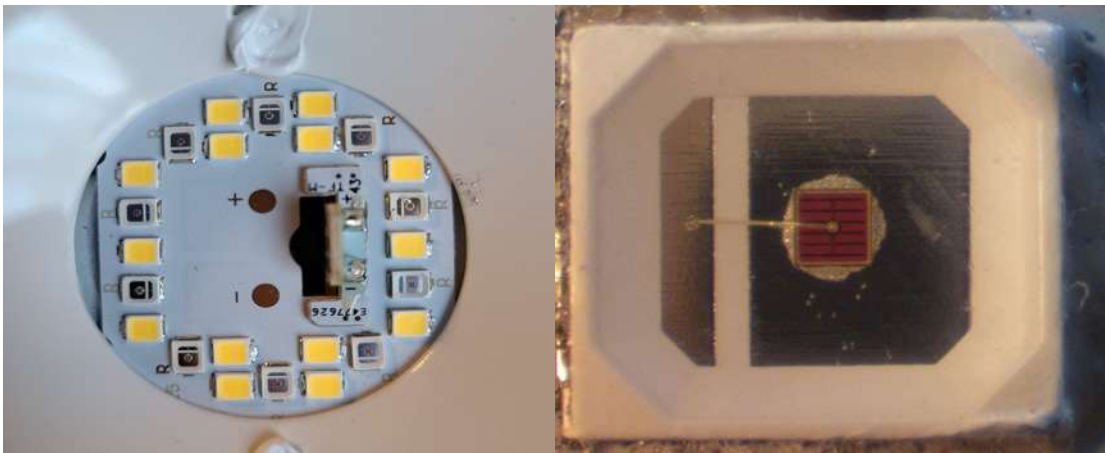
110. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the ‘125 Patent in connection with one of the ‘125 Accused Products (*e.g.*, the GE Grow Light). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the ‘125 Accused Products that it obtains during discovery.

1(a): A nitride-based semiconductor light-emitting device comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import

into the United States, semiconductor light emitting devices that are covered by claim 1 of the ‘125 Patent.

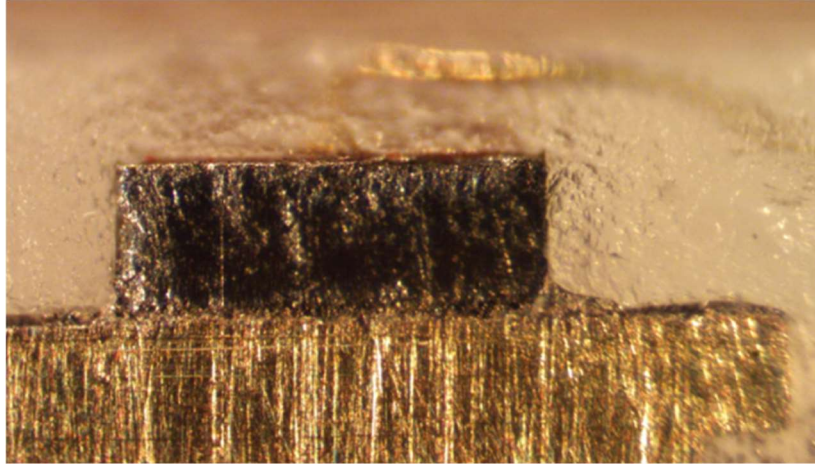
As one non-limiting example, the GE Grow Light comprises a “semiconductor light emitting device,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-4-75-in-1-Light-White-9-Watt-Br30-LED-Grow-Light/1001062847>.

To illustrate, top-down views of an example multiple color nitride-based semiconductor light-emitting device from a GE Grow Light are shown below:

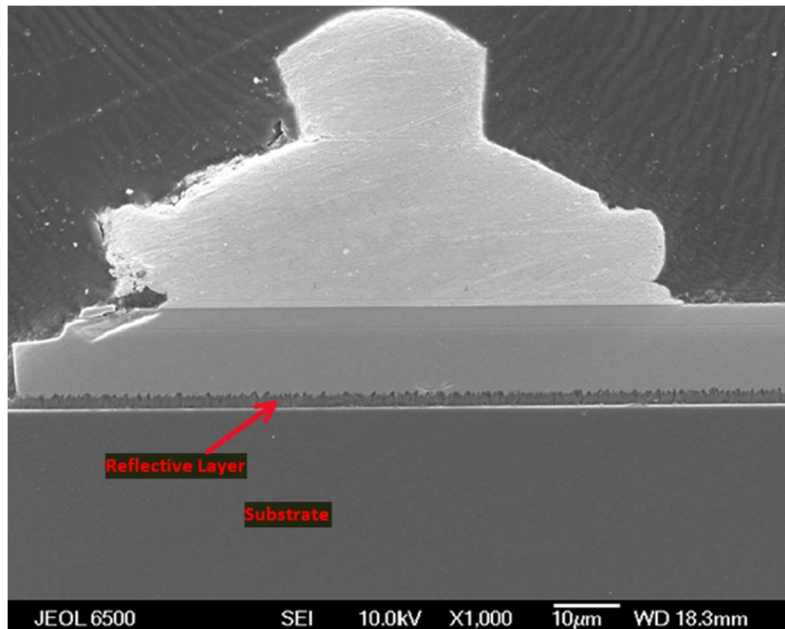


1(b): a reflective layer formed on a support substrate;— The GE Grow Light comprises a reflective layer formed on a support substrate.

For example, shown below is a cross-sectional view showing a reflective layer formed on a support substrate from the GE Grow Light:

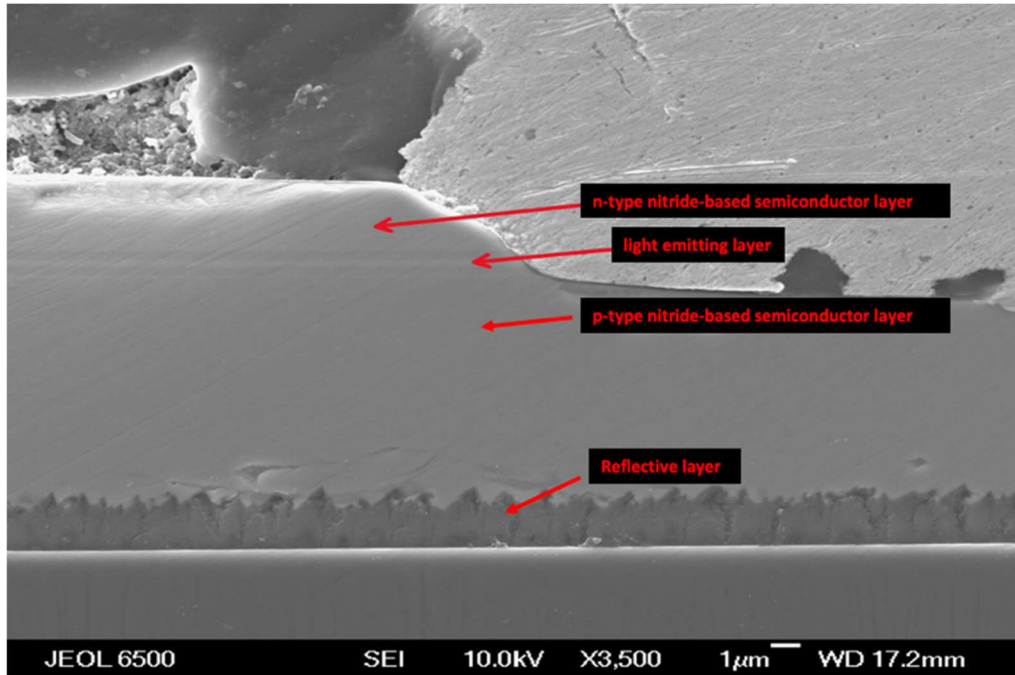


As another example, and in more detail, shown below is a scanning electron microscope (“SEM”) image showing a reflective layer formed on a support substrate from the GE Grow Light. As shown, the substrate is a ceramic material, and a reflective layer is formed on the substrate:



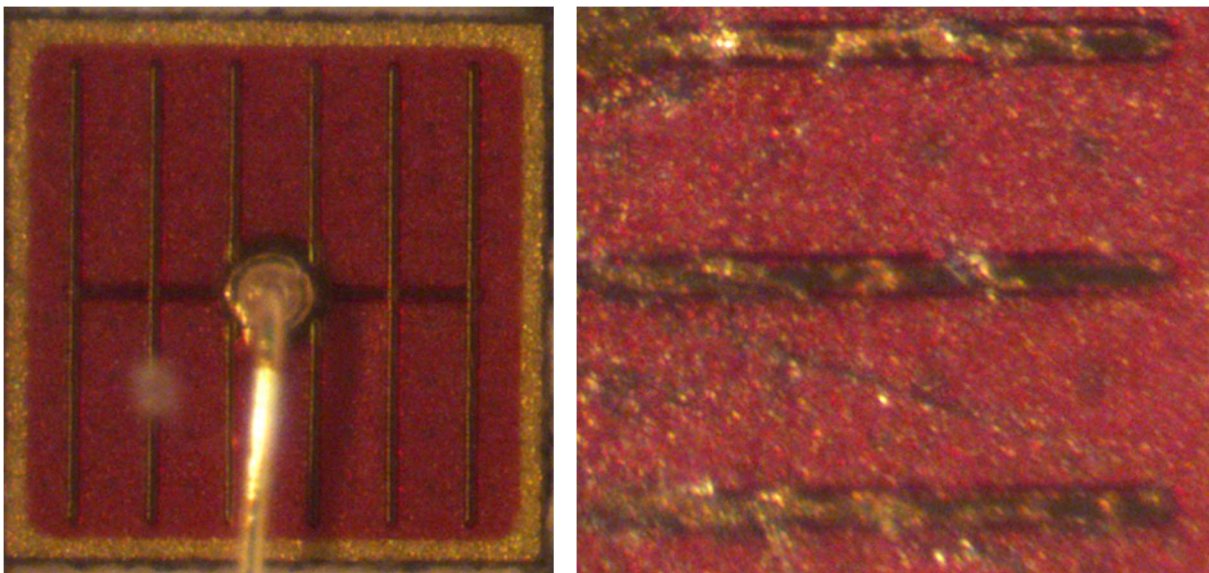
1(c): a p-type nitride-based semiconductor layer, a light-emitting layer and an n-type nitride-based semiconductor layer successively formed on the reflective layer;— The GE Grow Light bulb comprises a p-type nitride-based semiconductor layer, a light-emitting layer and an n-type nitride-based semiconductor layer successively formed on the reflective layer.

For example, shown below is a close-up SEM image of the cross-sectioned LED chip from the GE Grow Light identifying a p-type nitride-based semiconductor layer, a light emitting layer, and a n-type nitride-based semiconductor layer successively formed on the reflective layer:



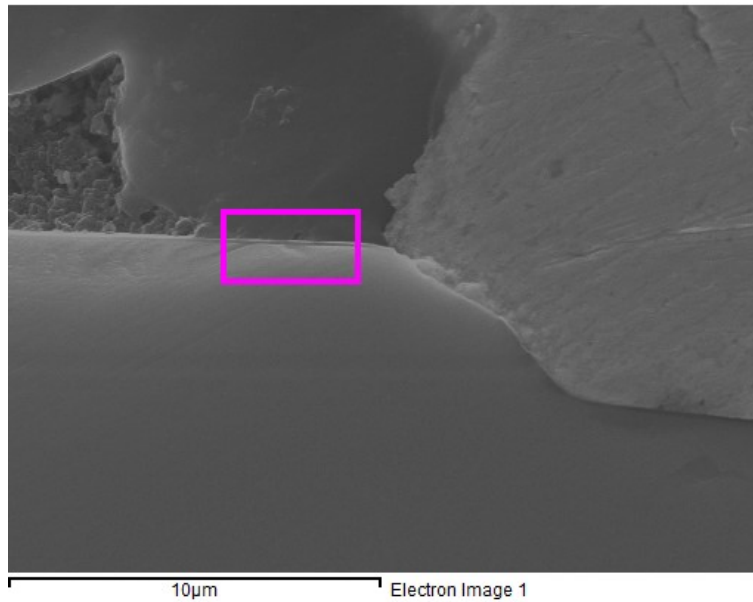
1(d): wherein a light extracting surface located above said n-type nitride-based semiconductor layer has irregularities; and— The GE Grow Light comprises a light extracting surface that is located above the n-type nitride-based semiconductor layer and has irregularities.

For example, shown below are top views of a diode in the GE Grow Light that shows a light extracting surface located above the n-type nitride-based semiconductor layer (shown above with respect to claim element 1(c)) having surface irregularities:

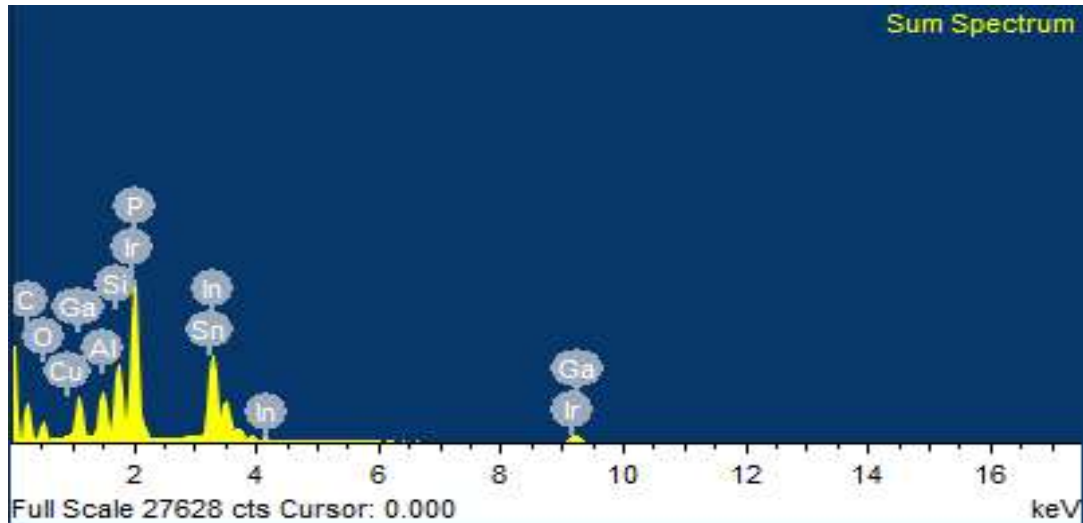


1(e): a high refractive index film including one selected from a group consisting of silicon nitride, indium oxide, neodymium oxide, zirconium oxide, titanium oxide, cerium oxide and bismuth oxide is formed on said n-type nitride-based semiconductor layer, and an upper surface of said high refractive index film is said light extracting surface,— The GE Grow Light comprises a high refractive index film including one selected from a group consisting of silicon nitride, indium oxide, neodymium oxide, zirconium oxide, titanium oxide, cerium oxide and bismuth oxide is formed on said n-type nitride-based semiconductor layer, and an upper surface of said high refractive index film is said light extracting surface.

For example, shown below is an SEM image showing a high refractive index film formed on the n-type nitride-based semiconductor layer, where an upper surface of the high refractive index film corresponds to the light extracting surface:



As further shown below, a screenshot of a sum frequency generation spectroscopy (SFG) measurement is provided that verifies that the high refractive index film includes indium (In) and tin (Sn) oxides:



111. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '125 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '125 Patent under 35 U.S.C. § 271(c).

112. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '125 Patent while being on notice of (or willfully blind to) the '125 Patent. For instance, Defendants have supplied and continue to supply the '125 Accused Products to customers (*e.g.*, end users and/or distributors of the '125 Accused Products) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '125 Patent.

113. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '125 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the '125 Accused Products and uses of the '125 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-4-75-in-1-Light-White-9-Watt-Br30-LED-Grow-Light/1001062844>.

114. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '125 Patent. For instance, Defendants know (and/or have known) of the existence of the '125 Patent or at least should have known of the existence of the '125 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '125 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '125 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '125 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '125 Patent and/or subjectively believe (and/or have

believed) that their actions will (and/or would) result in infringement of the '125 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

115. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '125 Patent by offering for sale, selling, and/or importing one or more components in connection with the '125 Accused Products that contribute to the direct infringement of the '125 Patent by customers of the '125 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '125 Patent or were willfully blind to its existence since at least as early as the filing and/or service of this Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the '125 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '125 Patent. Defendants have supplied (and/or continues to supply) the '125 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '125 Patent by using the Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

116. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '125 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

117. Additional allegations regarding Defendants' knowledge of the '125 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

118. Defendants' infringement of the '125 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

119. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the ‘125 Patent.

120. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants’ infringement of the ‘125 Patent, including, without limitation, a reasonable royalty.

COUNT V: INFRINGEMENT OF U.S. PATENT NO. 7,161,190

121. LedComm incorporates by reference and re-alleges paragraphs 41-47 of the Complaint as if fully set forth herein.

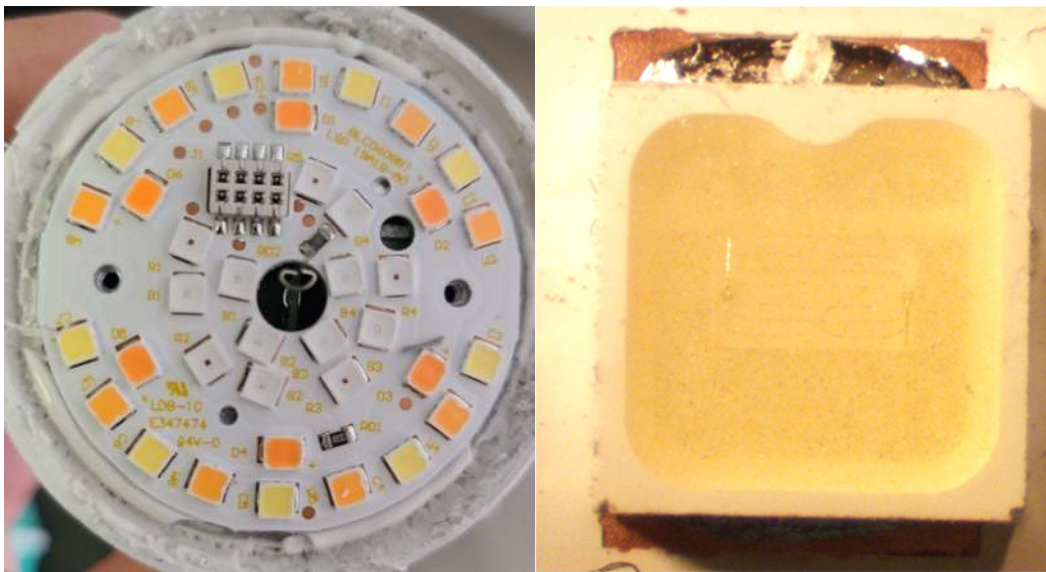
122. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the ‘190 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, GE A19 bulbs; GE Floodlight; GE Brightstik; GE Grow Light; GE Life Bulb; GE Relax BR30; GE Reveal HD Bulb; GE Smart Color Bulb; GE Tube Light; and GE Ultra Bright Par 38, among other substantially similar products) (collectively, the “‘190 Accused Products”).

123. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the ‘190 Patent in connection with two of the ‘190 Accused Products (*e.g.*, the GE Smart Color Bulb and GE Tube Light). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

1(a): A semiconductor light-emitting device comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, semiconductor light emitting devices that are covered by claim 1 of the ‘190 Patent.

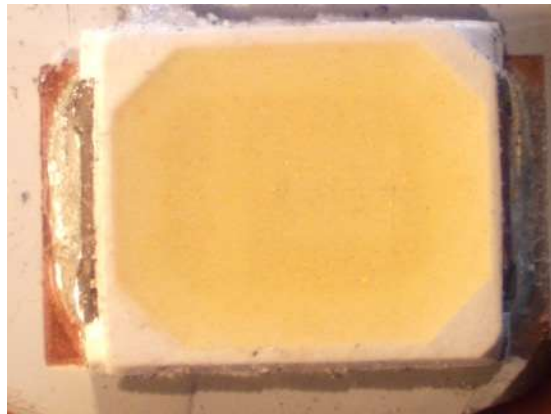
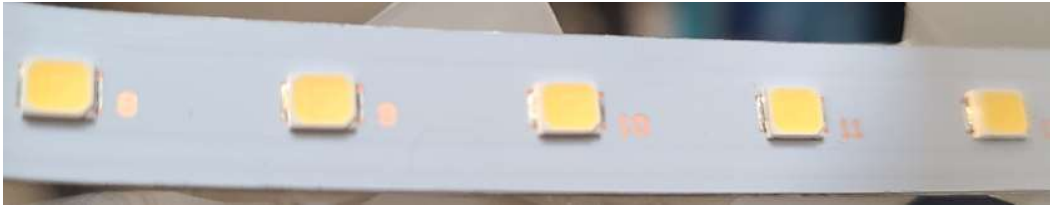
As one non-limiting example, the GE Smart Color Bulb comprises a “semiconductor light emitting device,” as recited in claim 1. *See, e.g.,* <https://www.lowes.com/pd/GE-C-by-GE-Smart-60-Watt-EQ-A19-Full-Color-Dimmable-Smart-LED-Light-Bulb-2-Pack/1002470508>.

To illustrate, a top-down view of example color LED chips from a GE Smart Color Bulb is shown in the first image below, and a top-down view of an example phosphor LED chip from a GE Smart Color Bulb is shown in the second image below:



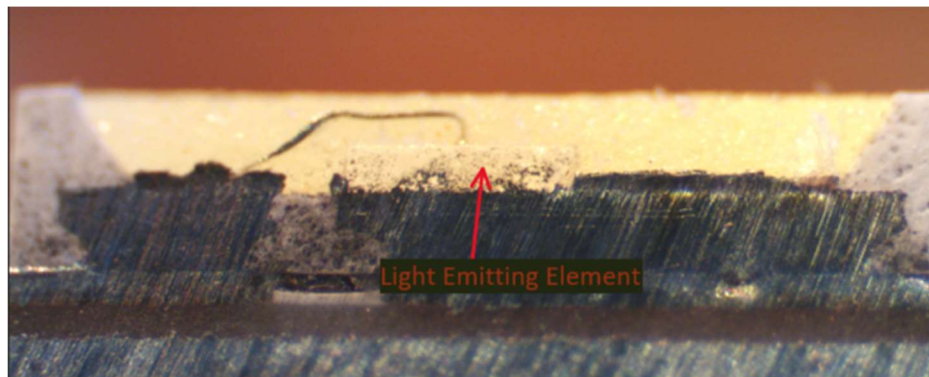
As another non-limiting example, the GE Tube Light comprises a “semiconductor light emitting device,” as recited in claim 1. *See, e.g.,* <https://www.lowes.com/pd/GE-15-Watt-EQ-48-in-Daylight-Linear-LED-Tube-Light-Bulb-2-Pack/1002643054>.

To illustrate, top-down views of an example phosphor LED chip from a GE Tube Light are shown below:

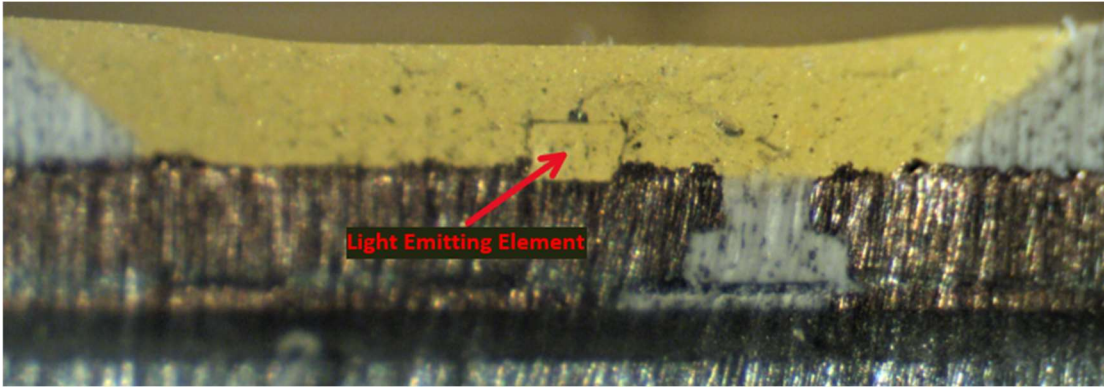


1(b): a light-emitting element;— The GE Smart Color Bulb and GE Tube Light each comprise a light-emitting element.

For example, shown below is a cross-sectional view of the example phosphor LED from the GE Smart Color Bulb with the light-emitting element identified:



As another example, shown below is a cross-sectional view of the LED from the GE Tube Light with the light-emitting element identified:

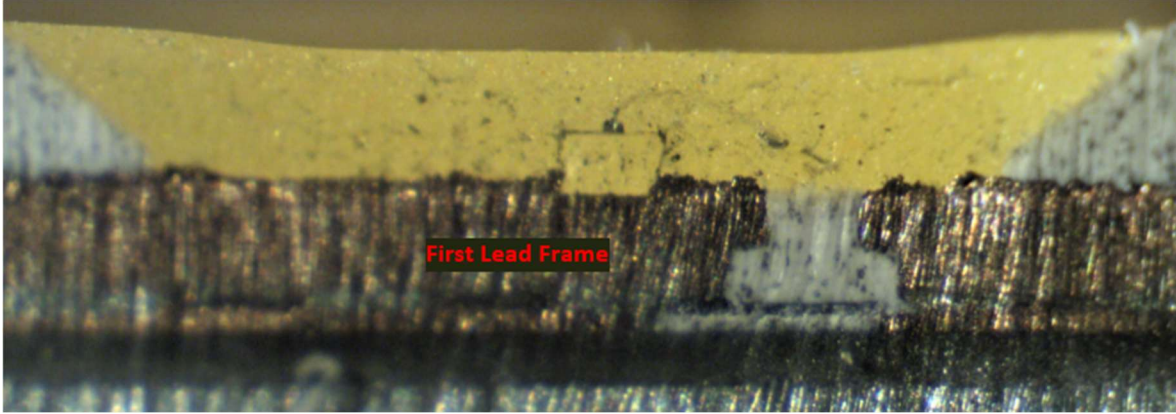


1(c): a first lead frame having a main surface having said light-emitting element mounted thereon;— The GE Smart Color Bulb and GE Tube Light each comprise a first lead frame having a main surface having said light-emitting element mounted thereon.

For example, shown below is a resulting cross-sectional view of one cross-sectioned LED chip from the GE Smart Color Bulb with a first lead frame having a main surface on which the light-emitting element is mounted identified:

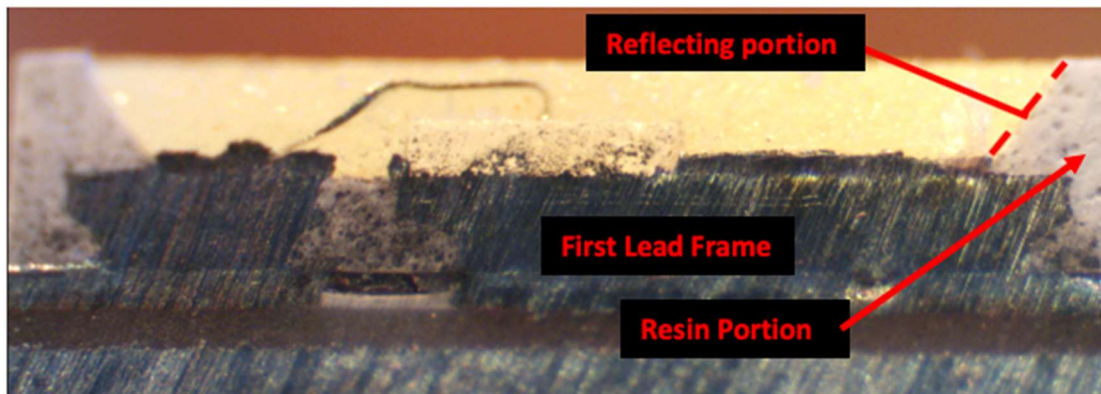


As another example, shown below is a resulting cross-sectional view of one cross-sectioned LED chip from the GE Tube Light with a first lead frame having a main surface on which the light-emitting element is mounted identified:

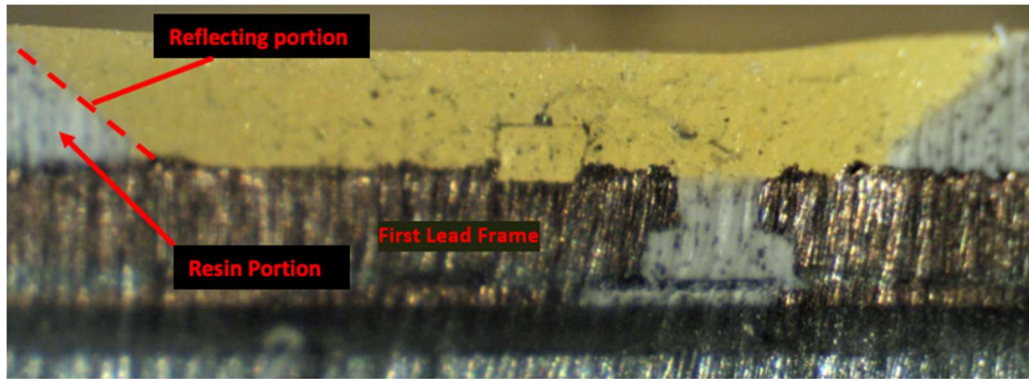


1(d): a resin portion for fixing said first lead frame, said resin portion has a reflecting portion reflecting light emitted from said light-emitting element; and— The GE Smart Color Bulb and GE Tube Light each comprise a resin portion for fixing said first lead frame, said resin portion has a reflecting portion reflecting light emitted from said light-emitting element.

For example, shown below is a cross-sectional view of the phosphor LED chip from the GE Smart Color Bulb showing the resin portion for fixing the first lead frame, and the reflecting portion reflecting light emitted from the light-emitting element:

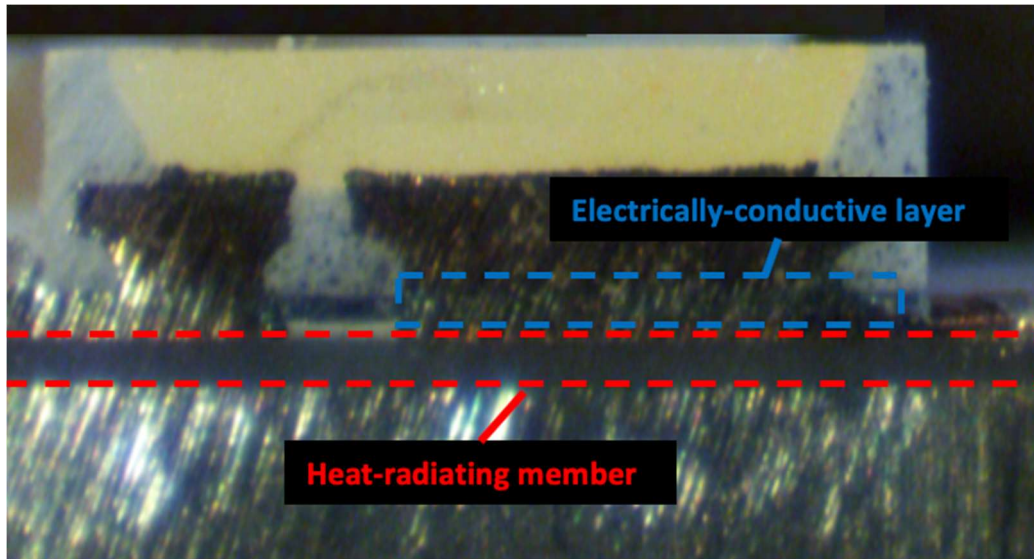


As another example, shown below is a cross-sectional view of the phosphor LED chip from the GE Tube Light showing the resin portion for fixing the first lead frame, and the reflecting portion reflecting light from the light-emitting element:



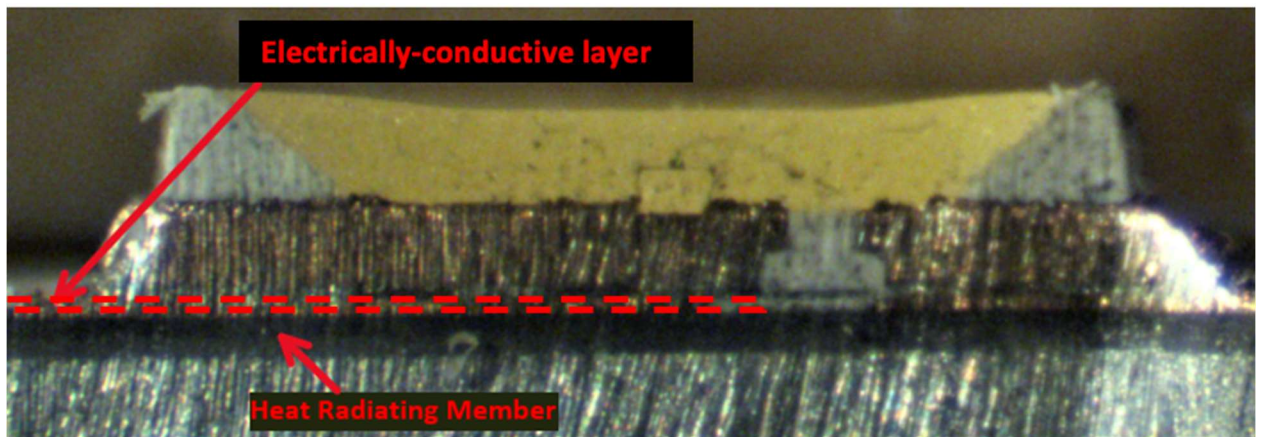
1(e): a heat-radiating member bonded to a back face of said first lead frame with an electrically-conductive layer containing metal interposed therebetween, said electrically-conductive layer is formed to extend from an area below the reflecting portion to the area outside the area covered by the reflecting portion,— The GE Smart Color Bulb and GE Tube Light each comprises a heat-radiating member bonded to a back face of said first lead frame with an electrically-conductive layer containing metal interposed therebetween, said electrically-conductive layer is formed to extend from an area below the reflecting portion to the area outside the area covered by the reflecting portion.

For example, shown below is a cross-sectional view of a phosphor LED chip from the GE Smart Color Bulb with a heat radiating member bonded to a back face of the first lead frame with an electrically-conductive layer containing metal interposed therebetween identified:



As shown above, the electrically-conductive layer is formed to extend from an area below the reflecting portion to the area outside the area covered by the reflecting portion.

In another example, shown below is a cross-sectional view of a phosphor LED chip from the GE Tube Light with a heat radiating member bonded to a back face of the first lead frame with an electrically-conductive layer containing metal interposed therebetween identified:



As shown above, the electrically-conductive layer is formed to extend from an area below the reflecting portion to the area outside the area covered by the reflecting portion.

124. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '190 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '190 Patent under 35 U.S.C. § 271(c).

125. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '190 Patent while being on notice of (or willfully blind to) the '190 Patent. For instance, Defendants have supplied and continue to supply the '190 Accused Products to customers (*e.g.*, end users and/or distributors of the '190 Accused Products) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '190 Patent.

126. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '190 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the '190 Accused Products and uses of the '190 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-C-by-GE-Smart-60-Watt-EQ-A19-Full-Color-Dimmable-Smart-LED-Light-Bulb-2-Pack/1002470508>; <https://www.lowes.com/pd/GE-15-Watt-EQ-48-in-Daylight-Linear-LED-Tube-Light-Bulb-2-Pack/1002643054>.

127. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '190 Patent. For instance, Defendants know (and/or have known) of the existence of the '190 Patent or at least should have known of the existence of the '190 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '190 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '190 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend

(and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '190 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '190 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '190 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

128. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '190 Patent by offering for sale, selling, and/or importing one or more components in connection with the '190 Accused Products that contribute to the direct infringement of the '190 Patent by customers of the '190 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '190 Patent or were willfully blind to its existence since at least as early as the filing and/or service of this Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the '190 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '190 Patent. Defendants have supplied (and/or continues to supply) the Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '190 Patent by using the '190 Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

129. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '190 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

130. Additional allegations regarding Defendants' knowledge of the '190 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

131. Defendants' infringement of the '190 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

132. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '190 Patent.

133. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants' infringement of the '190 Patent, including, without limitation, a reasonable royalty.

COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 7,301,176

134. LedComm incorporates by reference and re-alleges paragraphs 48-54 of the Complaint as if fully set forth herein.

135. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the '176 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, GE A19 bulbs; GE Floodlight; GE Brightstik; GE Grow Light; GE Life Bulb; GE Relax BR30; GE Reveal HD Bulb; GE Smart Color Bulb; GE Tube Light; and GE Ultra Bright Par 38, among other substantially similar products) (collectively, the "'176 Accused Products").

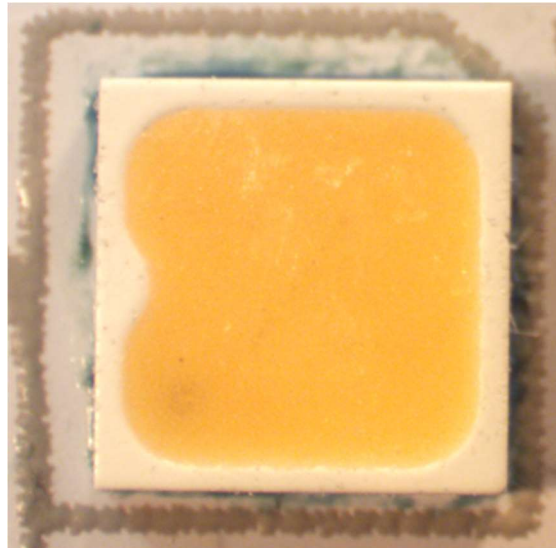
136. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the '176 Patent in connection with two of the '176 Accused Products (*e.g.*, the GE Life Bulb and GE Ultra Bright Par 38 bulb). This

description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

1(a): A semiconductor light-emitting device comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, semiconductor light emitting devices that are covered by claim 1 of the ‘176 Patent.

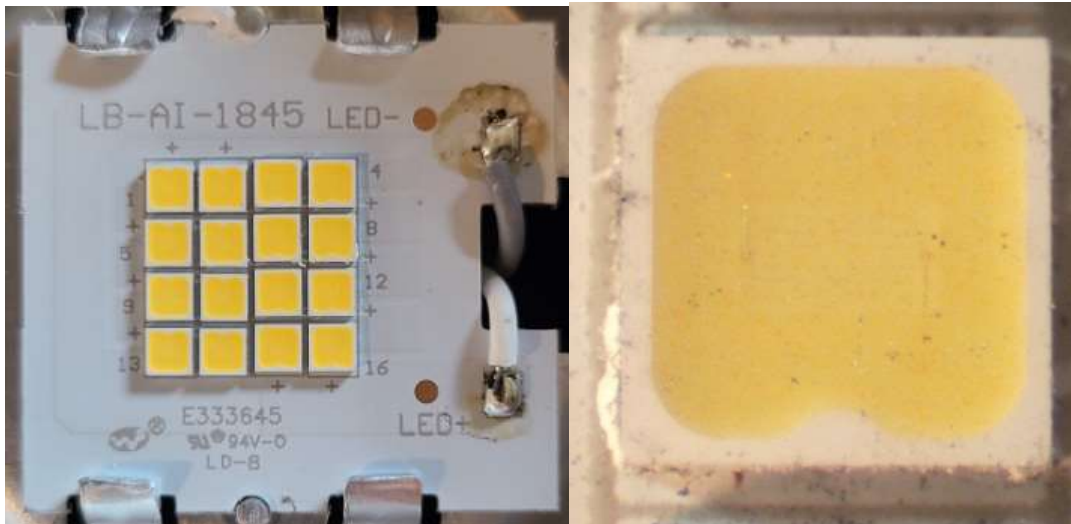
As one non-limiting example, the GE Life Bulb comprises a “semiconductor light emitting device,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-C-by-GE-Smart-60-Watt-EQ-A19-Soft-White-Dimmable-Smart-LED-Light-Bulb-2-Pack/1001377912>.

For instance, shown below is a top-down view of an example phosphor LED from the GE Life Bulb:



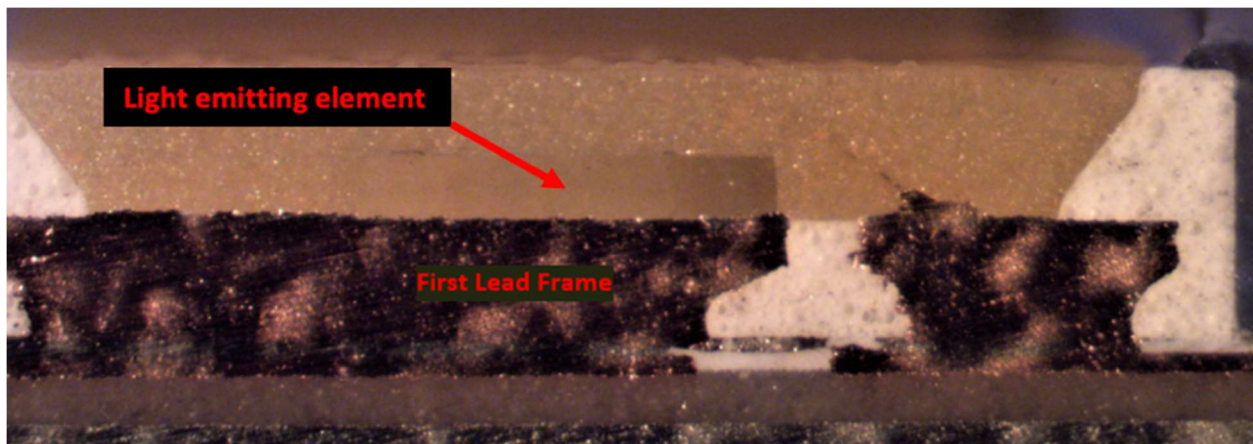
As another non-limiting example, the GE Ultra Bright Par 38 bulb comprises a “semiconductor light emitting device,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-Ultra-Bright-LED-150-Watt-EQ-LED-PAR38-Daylight-Dimmable-Flood-Light-Bulb/1002644142>.

For instance, shown below are top down views of an example phosphor LED from the GE Ultra Bright Par 38 bulb:

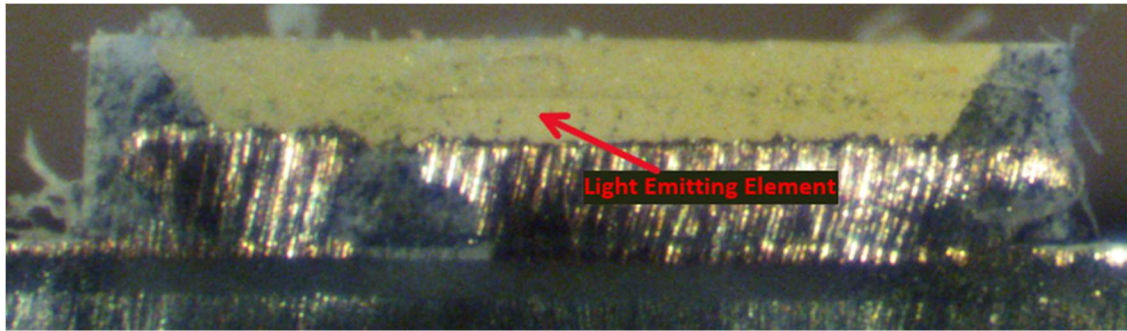


1(b): a semiconductor light emitting element;— The GE Life Bulb and GE Ultra Bright Par 38 bulb each comprise a semiconductor light emitting element.

For example, a cross section of a phosphor LED from a GE Life Bulb was taken, and a resulting cross-sectional view is shown below with a semiconductor light emitting element identified

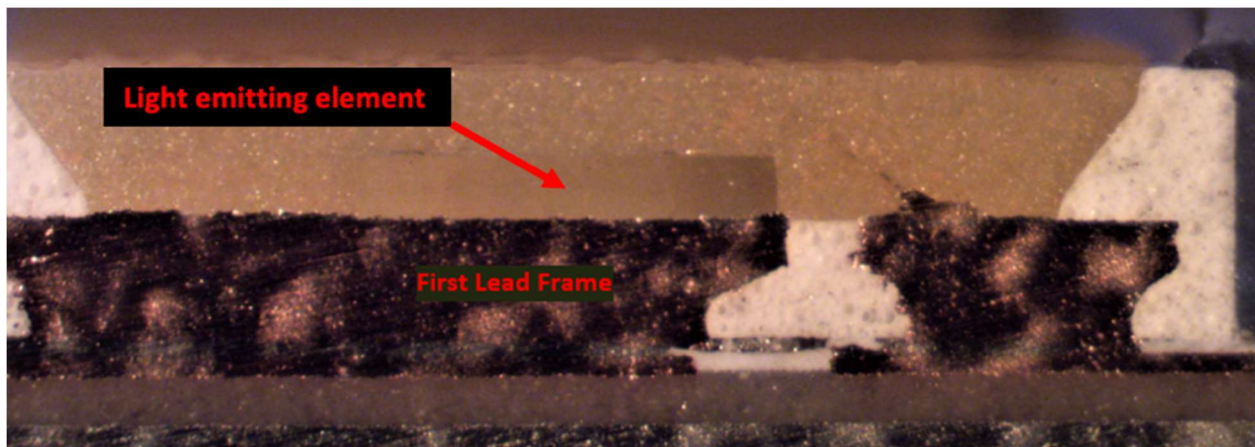


As another example, a cross section of an LED from a GE Ultra Bright Par 38 bulb was taken, and a resulting cross-sectional view is shown below with a semiconductor light emitting element identified:

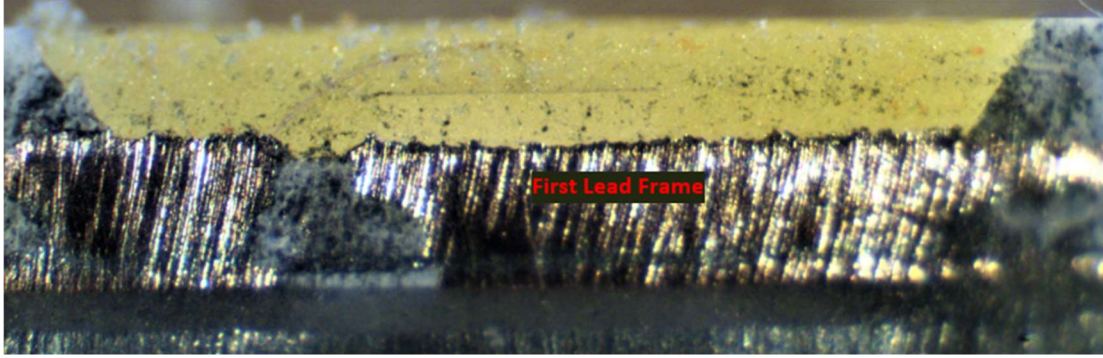


1(c): a first lead frame on which said semiconductor light emitting element is mounted;— The GE Life Bulb and GE Ultra Bright Par 38 bulb each comprise a first lead frame on which said semiconductor light emitting element is mounted.

For example, shown below is the cross-sectional view of the phosphor LED from the GE Life Bulb with an identification of a first lead frame on which the semiconductor light emitting element is mounted:

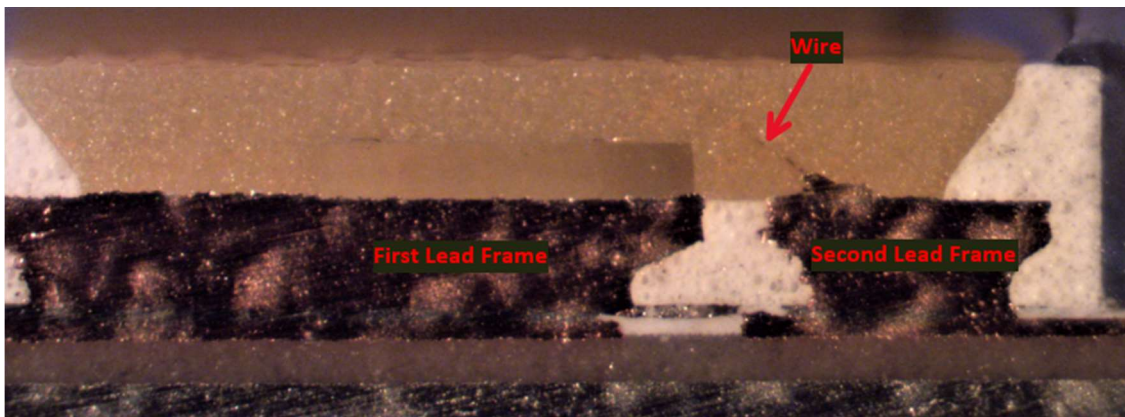


As another example, shown below is a resulting cross-sectional view of one cross-sectioned LED chip from the GE Ultra Bright Par 38 bulb with a first lead frame having a main surface on which the light-emitting element is mounted:

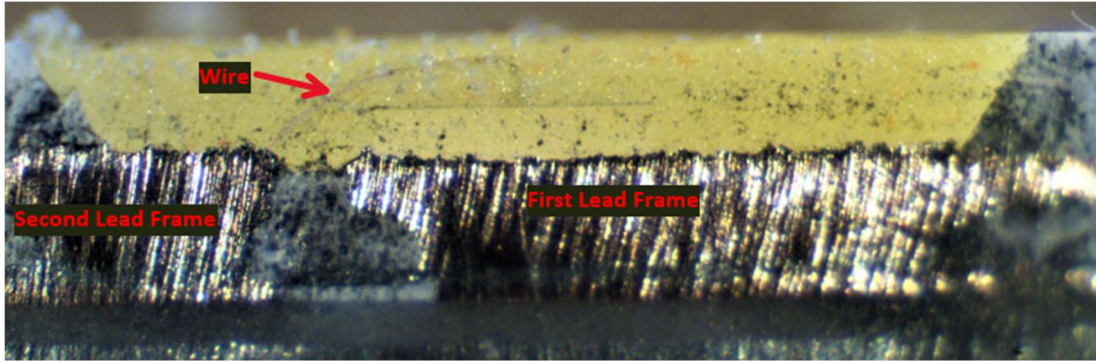


1(d): a second lead frame electrically connected to said semiconductor light emitting element via a wire;; and— The GE Life Bulb and GE Ultra Bright Par 38 bulb each comprise a second lead frame electrically connected to said semiconductor light emitting element via a wire.

For example, shown below is the cross-sectional view of the phosphor LED from the GE Life Bulb with the second lead frame electrically connected to the semiconductor light emitting element via a wire identified:

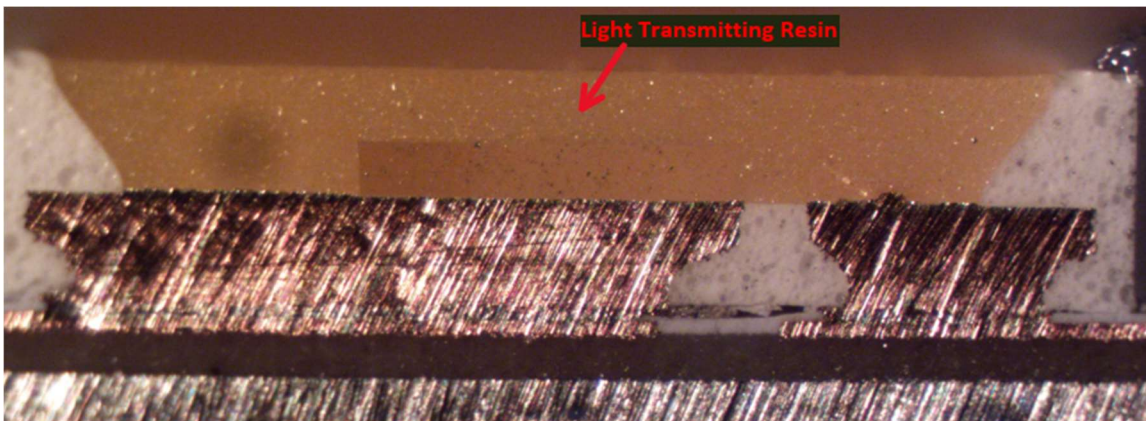


As another example, shown below are cross-sectional views of the phosphor LED chip from the GE Ultra Bright Par 38 bulb with the second lead frame electrically connected to the semiconductor light emitting element via a wire identified:

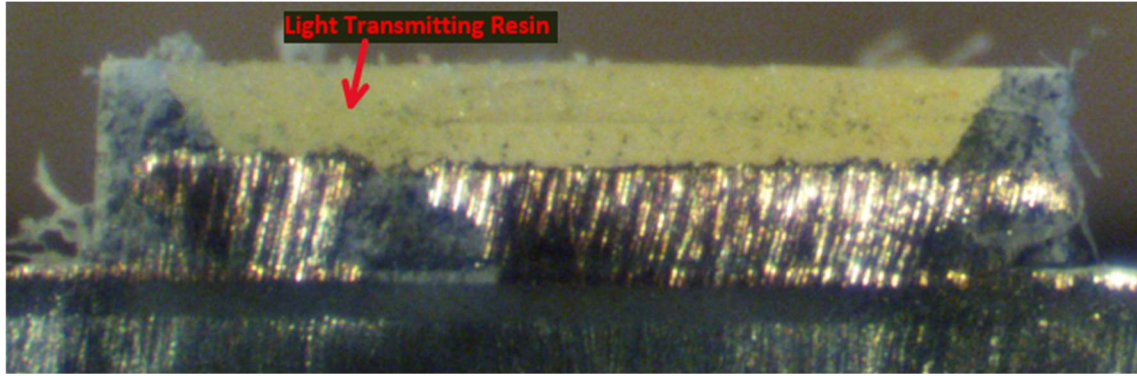


1(e): light transmitting resin formed on said semiconductor light emitting element and on said first and second lead frames,— The GE Life Bulb and GE Ultra Bright Par 38 bulb each comprise a light transmitting resin formed on said semiconductor light emitting element and on said first and second lead frames.

For example, shown below is the cross-sectional view of the phosphor LED from the GE Life Bulb with the light transmitting resin formed on the light emitting element and first and second lead frames identified:

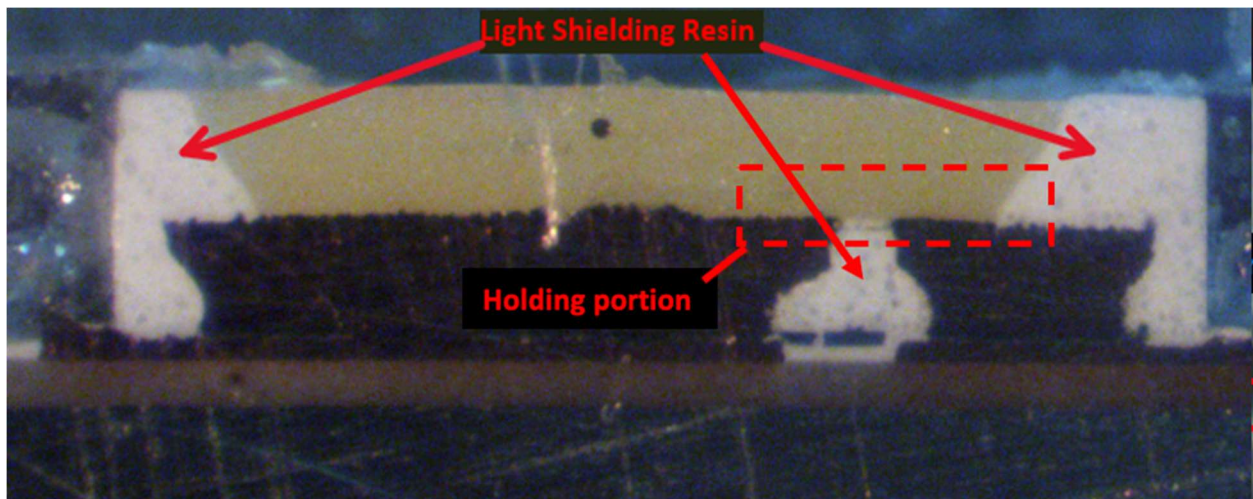


As another example, shown below is the cross-sectional view of the LED from the GE Ultra Bright Par 38 bulb with the light transmitting resin formed on the light emitting element and first and second lead frames identified:

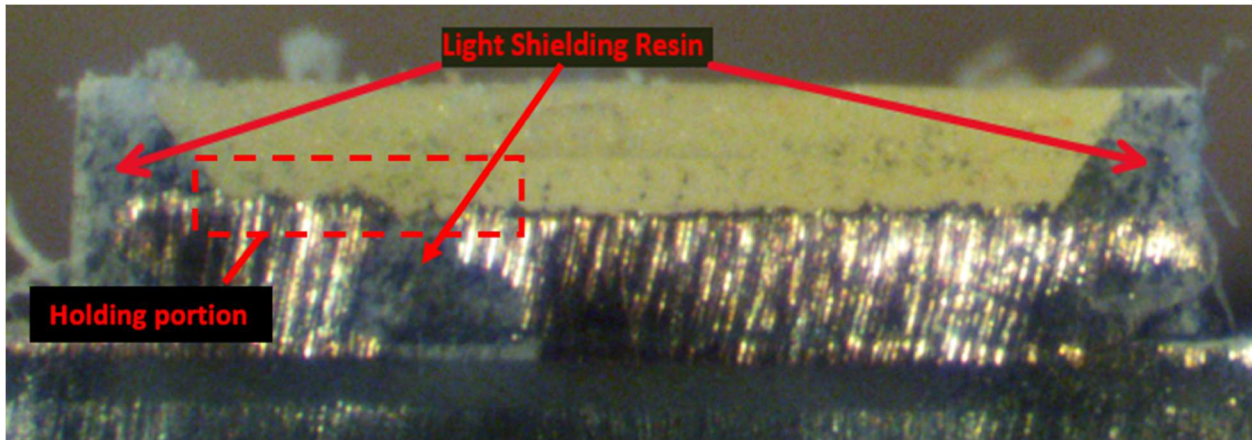


1(f): wherein said light emitting element is surrounded by a light shielding resin, wherein leading ends of said first and second lead frames are inserted into said light transmitting resin to provide a holding portion holding said first and second lead frames, — In the GE Life Bulb and GE Ultra Bright Par 38 bulb, the light emitting element is surrounded by a light shielding resin, and leading ends of the first and second lead frames are inserted into the light transmitting resin to provide a holding portion holding the first and second lead frames.

For example, shown below is the cross-sectional view of the phosphor LED from the GE Life Bulb with the light shielding resin and holding portion identified:

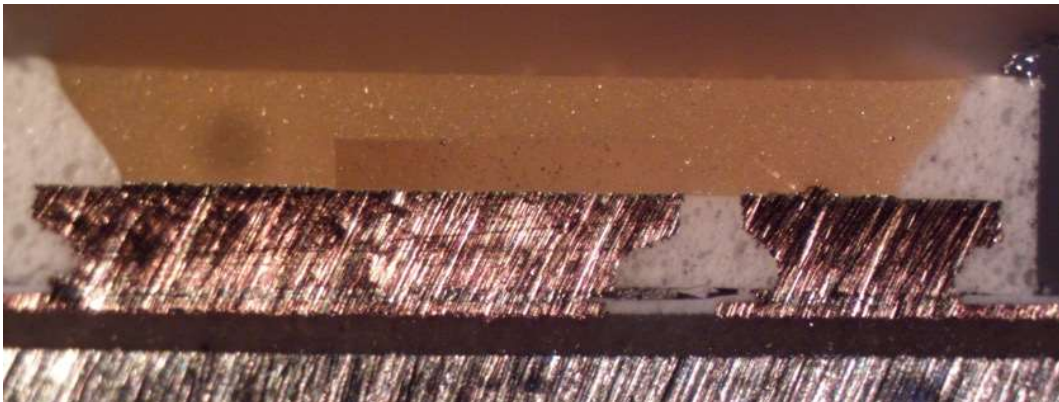


As another example, shown below is the cross-sectional view of the LED from the GE Ultra Bright Par 38 bulb with the light shielding resin and holding portion identified:

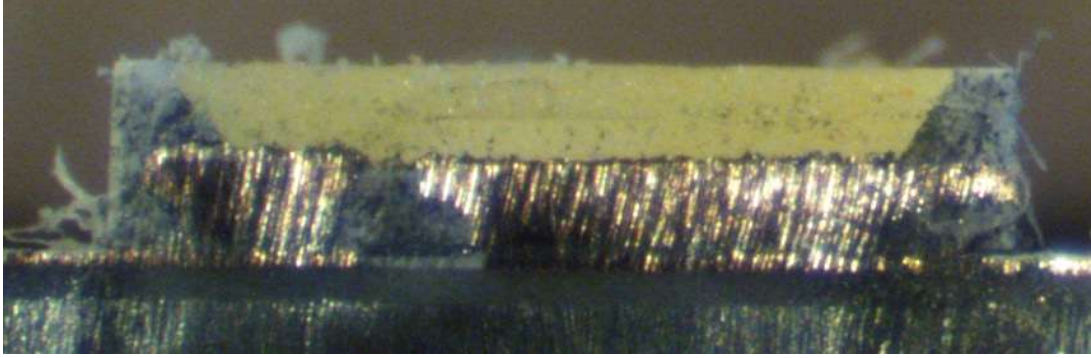


1(g): wherein said light shielding resin has a reflectance higher than a reflectance of said light transmitting resin, and — In the GE Life Bulb and GE Ultra Bright Par 38 bulb, the light shielding resin has a reflectance higher than a reflectance of the light transmitting resin.

For example, as shown below, the light shielding resin of GE Life Bulb is opaque and white, whereas the light transmitting resin is largely transparent. Accordingly, on information and belief, the light shielding resin of GE Life Bulb reflects a greater amount of light than the light transmitting resin.

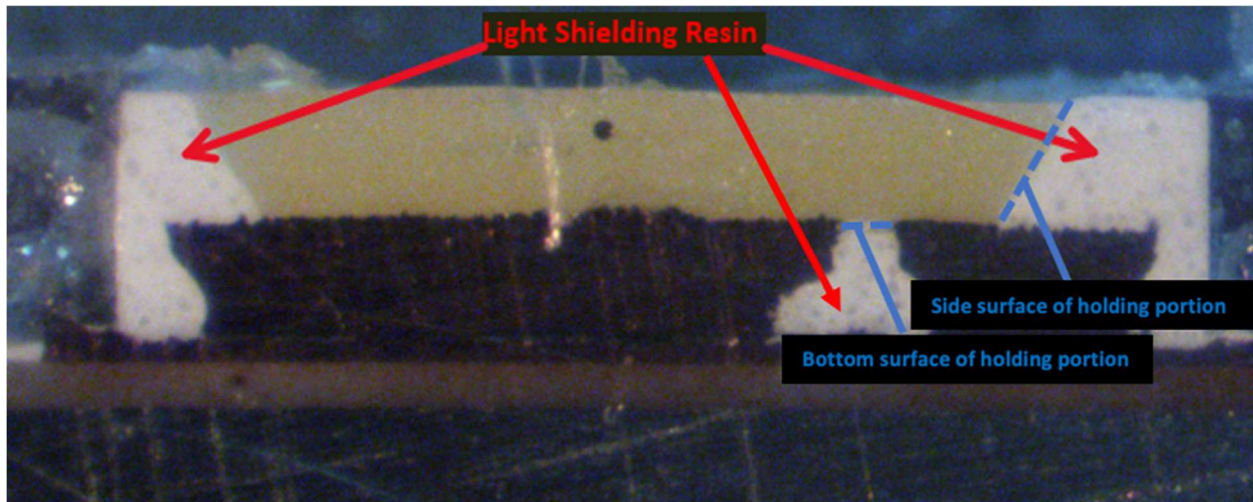


As another example, as shown below, the light shielding resin of the GE Ultra Bright Par 38 bulb is opaque, whereas the light transmitting resin is largely transparent. Accordingly, on information and belief, the light shielding resin of the GE Ultra Bright Par 38 bulb reflects a greater amount of light than the light transmitting resin.

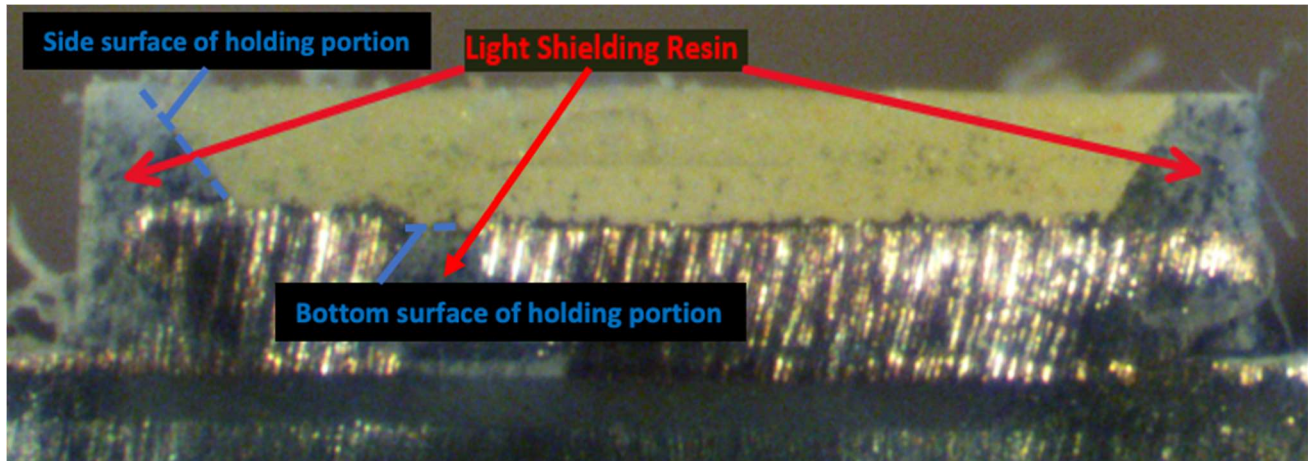


1(h): wherein said light shielding resin is formed to cover a bottom surface and a side surface of said holding portion provided in said light transmitting resin. — In the C by GE Life Bulb and GE Ultra Bright Par 38 bulb, the light shielding resin is formed to cover a bottom surface and a side surface of the holding portion provided in the light transmitting resin.

For example, shown below is the cross-sectional view of the phosphor LED from the GE Life Bulb with the light shielding resin covering a bottom surface and a side surface of the holding portion identified:



As another example, shown below is the cross-sectional view of the LED from the Ultra Bright Par 38 bulb with the light shielding resin covering a bottom surface and a side surface of the holding portion identified:



137. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '176 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '176 Patent under 35 U.S.C. § 271(c).

138. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '176 Patent while being on notice of (or willfully blind to) the '176 Patent. For instance, Defendants have supplied and continue to supply the '176 Accused Products to customers (*e.g.*, end users and/or distributors of the '176 Accused Products) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '176 Patent.

139. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '176 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the '176 Accused Products and uses of the '176 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-C-by-GE-Smart-60-Watt-EQ-A19-Soft-White-Dimmable-Smart-LED-Light-Bulb-2-Pack/1001377912>; <https://www.lowes.com/pd/GE-Ultra-Bright-LED-150-Watt-EQ-LED-PAR38-Daylight-Dimmable-Flood-Light-Bulb/1002644142>.

140. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '176 Patent. For instance, Defendants know (and/or have known) of the existence of the '176 Patent or at least should have known of the existence of the '176 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '176 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '176 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '176 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '176 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '176 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

141. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '176 Patent by offering for sale, selling, and/or importing one or more components in connection with the '176 Accused Products that contribute to the direct infringement of the '176 Patent by customers of the '176 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '176 Patent or were willfully blind to its existence since at least as early as the filing and/or service of this Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the '176 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '176 Patent. Defendants have supplied (and/or

continues to supply) the '176 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '176 Patent by using the Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

142. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '176 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

143. Additional allegations regarding Defendants' knowledge of the '176 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

144. Defendants' infringement of the '176 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

145. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '176 Patent.

146. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants' infringement of the '176 Patent, including, without limitation, a reasonable royalty.

COUNT VII: INFRINGEMENT OF U.S. PATENT NO. 7,490,959

147. LedComm incorporates by reference and re-alleges paragraphs 55-61 of the Complaint as if fully set forth herein.

148. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the '959 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, the GE Grow Light and

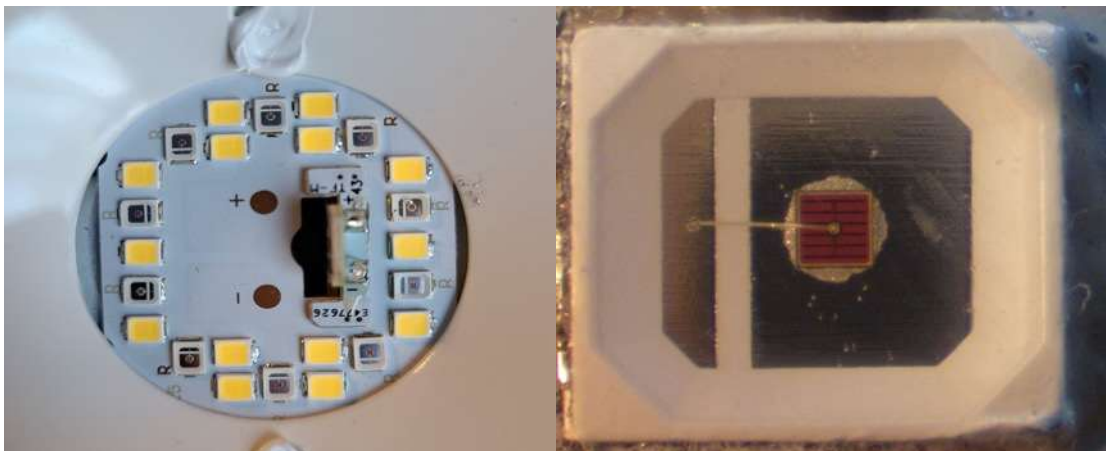
GE Tube Light, among other substantially similar products) (collectively, the “’959 Accused Products”).

149. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the ‘959 Patent in connection with two of the ‘959 Accused Products (*e.g.*, the GE Grow Light and GE Tube Light). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the ‘959 Accused Products that it obtains during discovery.

1(a): A light emitting apparatus, comprising::— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, semiconductor light emitting devices that are covered by claim 1 of the ‘959 Patent.

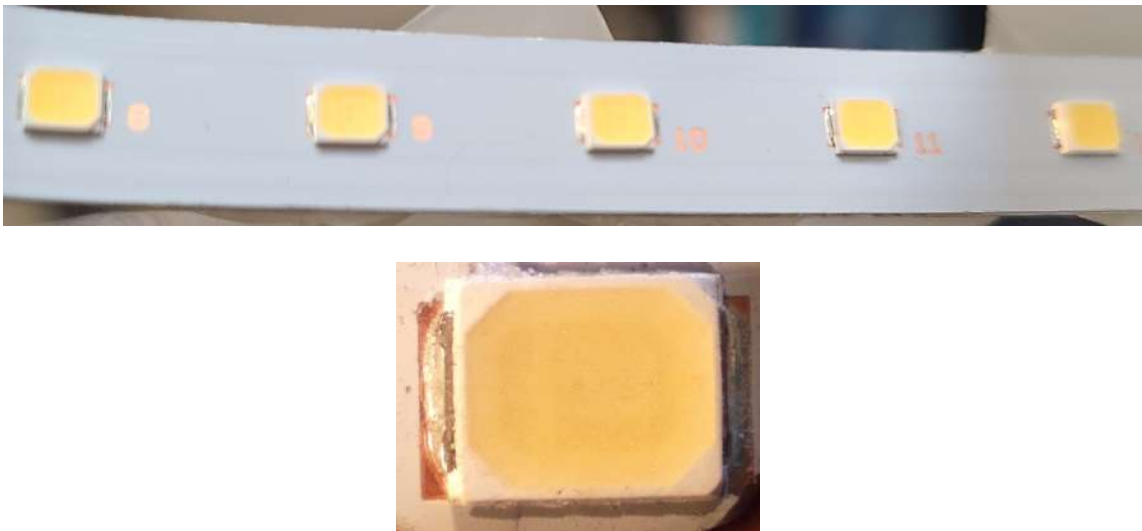
As one non-limiting example, the GE Grow Light comprises a “semiconductor light emitting apparatus,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-4-75-in-1-Light-White-9-Watt-Br30-LED-Grow-Light/1001062844>.

For instance, top-down views of an example multiple color semiconductor light-emitting apparatus from a GE Grow Light are shown below:



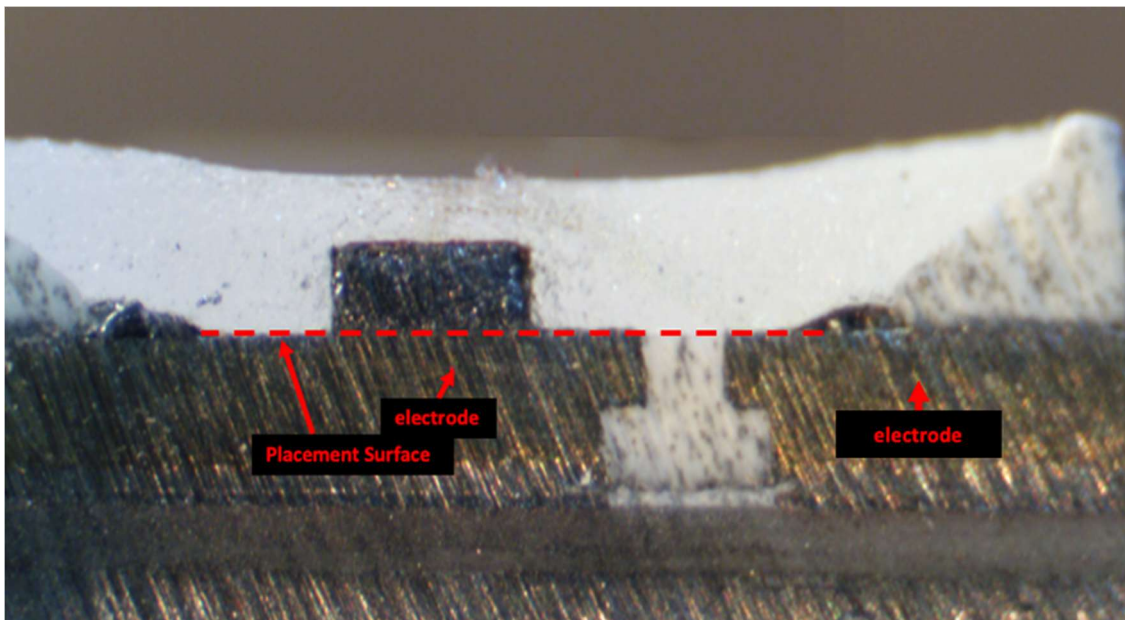
As another non-limiting example, the GE Tube Light comprises a “semiconductor light emitting apparatus,” as recited in claim 1. *See, e.g.,* <https://www.lowes.com/pd/GE-15-Watt-EQ-48-in-Daylight-Linear-LED-Tube-Light-Bulb-2-Pack/1002643054>.

For instance, top-down views of an example phosphorus-based semiconductor light-emitting apparatus from a GE Grow Light are shown below:

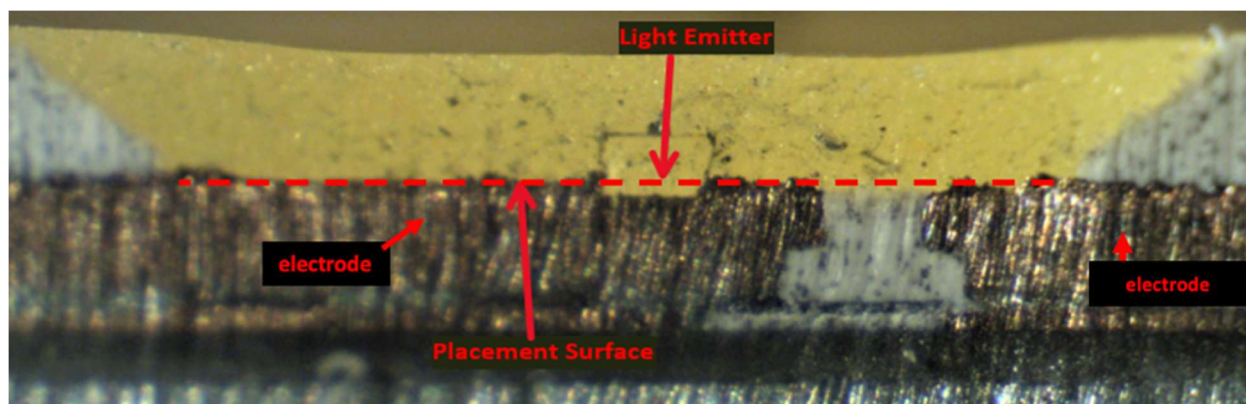


1(b): a placement surface that includes an electrode; — The GE Grow Light and GE Tube Light each comprises a placement surface that includes an electrode.

For example, shown below is a cross-sectional view of an LED from the GE Grow Light with a placement surface that includes an electrode identified:

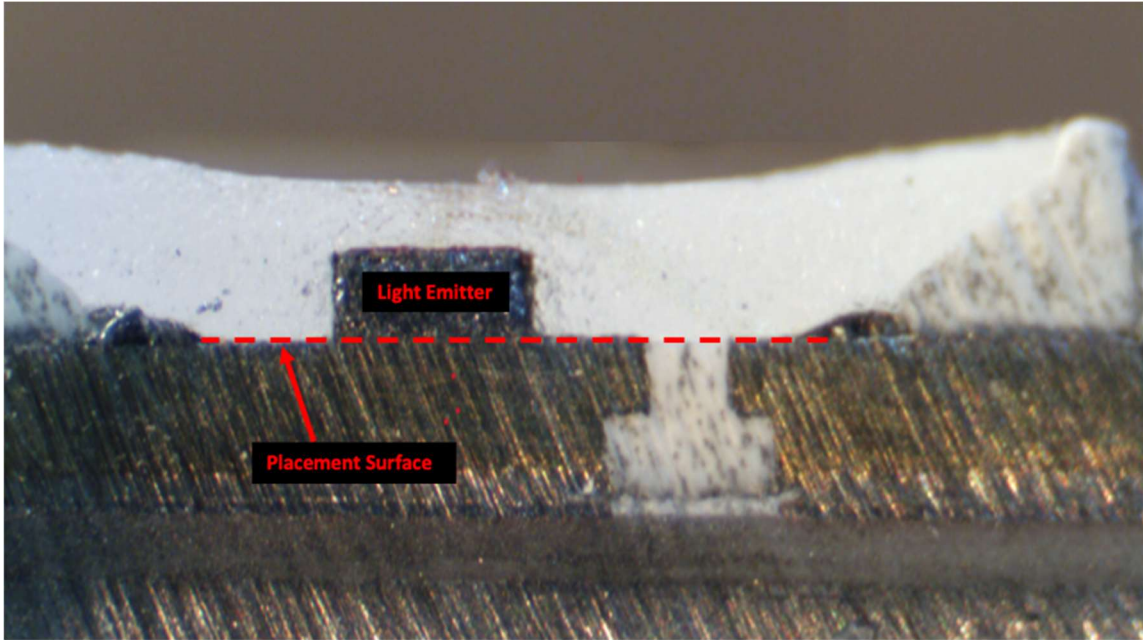


As another example, shown below is a cross-sectional view of an LED from the GE Tube Light with a placement surface that includes an electrode identified:

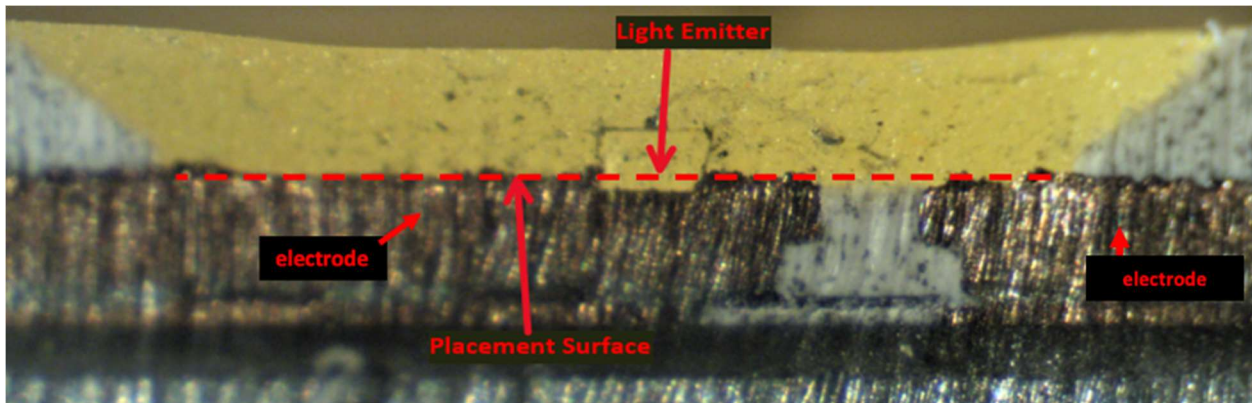


1(c): a light emitter that is placed on the placement surface;— The GE Grow and GE Tube Light bulb comprises a light emitter that is placed on the placement surface;.

For example, shown below is a cross-sectional view of the LED from the GE Grow Light with the light emitter placed on the placement surface identified:

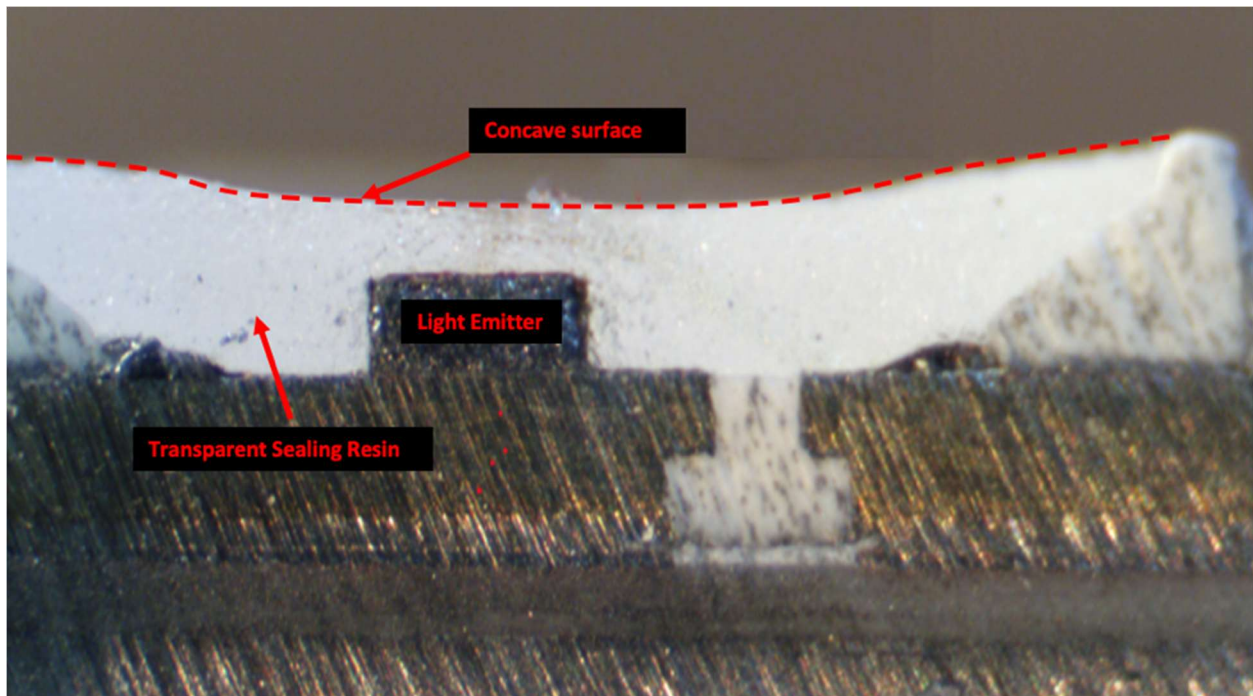


As another example, shown below is a cross-sectional view of the LED from the GE Tube Light with the light emitter placed on the placement surface identified:



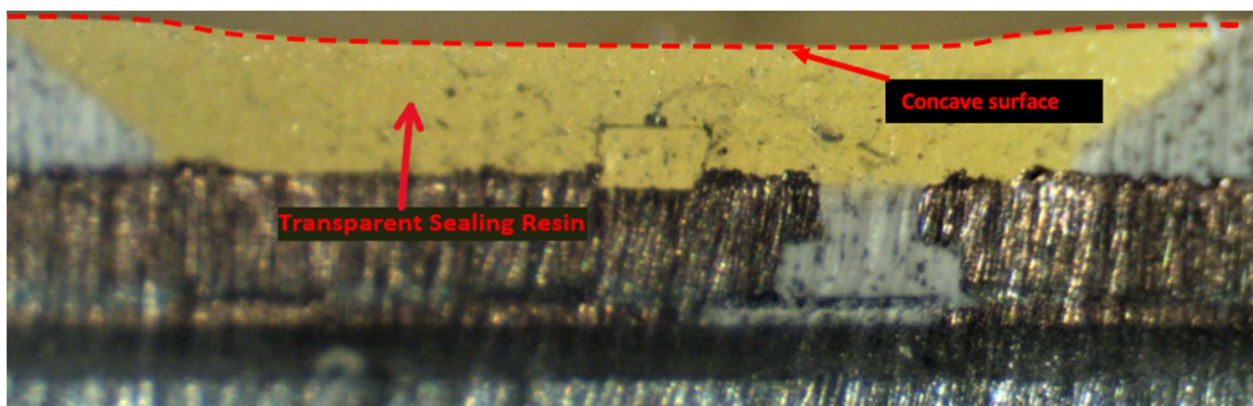
1(d): a transparent sealing resin that seals the light emitter, and forms a concave surface that is a light-outgoing surface via which light outgoing,— The GE Grow and GE Tube Light each comprises a transparent sealing resin that seals the light emitter, and forms a concave surface that is a light-outgoing surface via which light outgoing.

For example, shown below is a cross-sectional view of the LED from the GE Grow Light with a transparent sealing resin that seals the light emitter and forms a concave surface identified:



As shown above, the formed concave surface is a light-outgoing surface via which light outgoes.

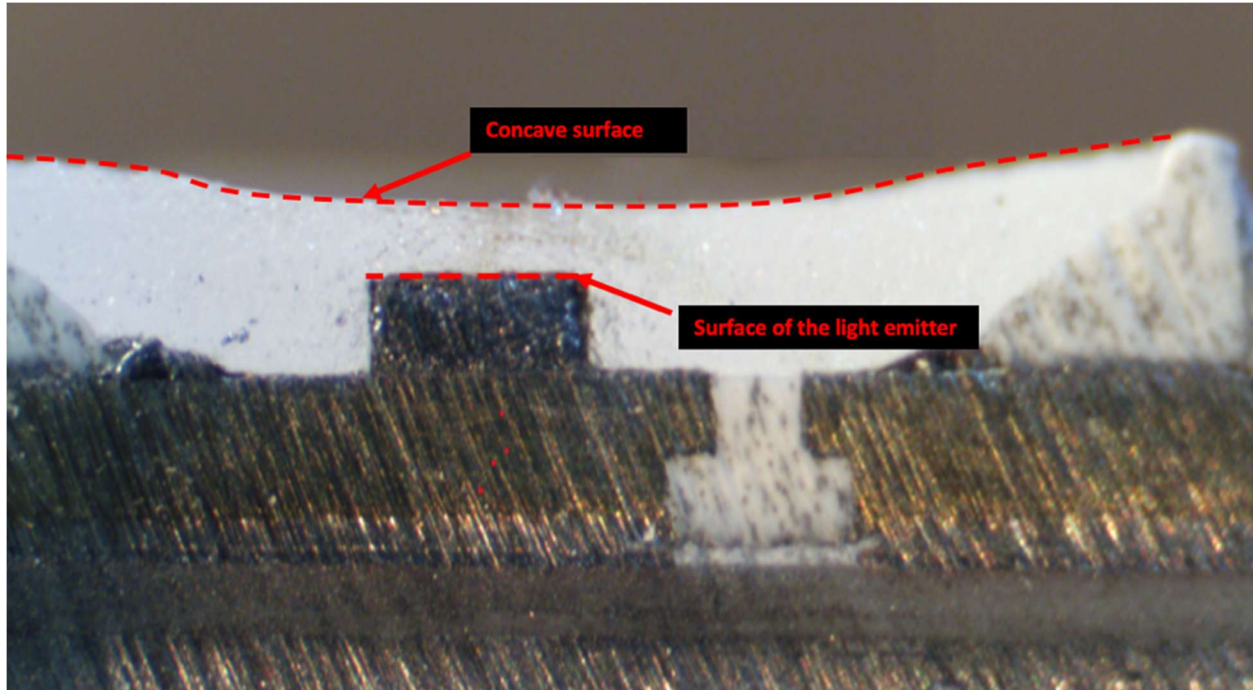
As another example, shown below is a cross-sectional view of the LED from the GE Tube Light with a transparent sealing resin that seals the light emitter and forms a concave surface identified:



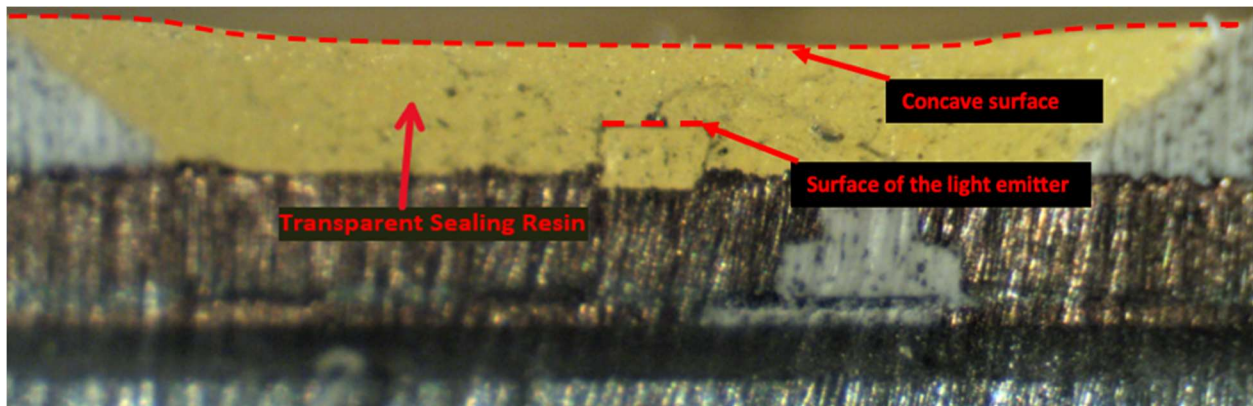
As shown above, the formed concave surface is a light-outgoing surface via which light outgoes.

1(e): the concave surface facing a surface of the light emitter, from which surface light is emitted; and— In the GE Grow and GE Tube Light, the concave surface faces a surface of the light emitter, from which surface light is emitted.

For example, shown below is a cross-sectional view of the LED from the GE Grow Light with the concave surface facing a surface of the light emitter identified:

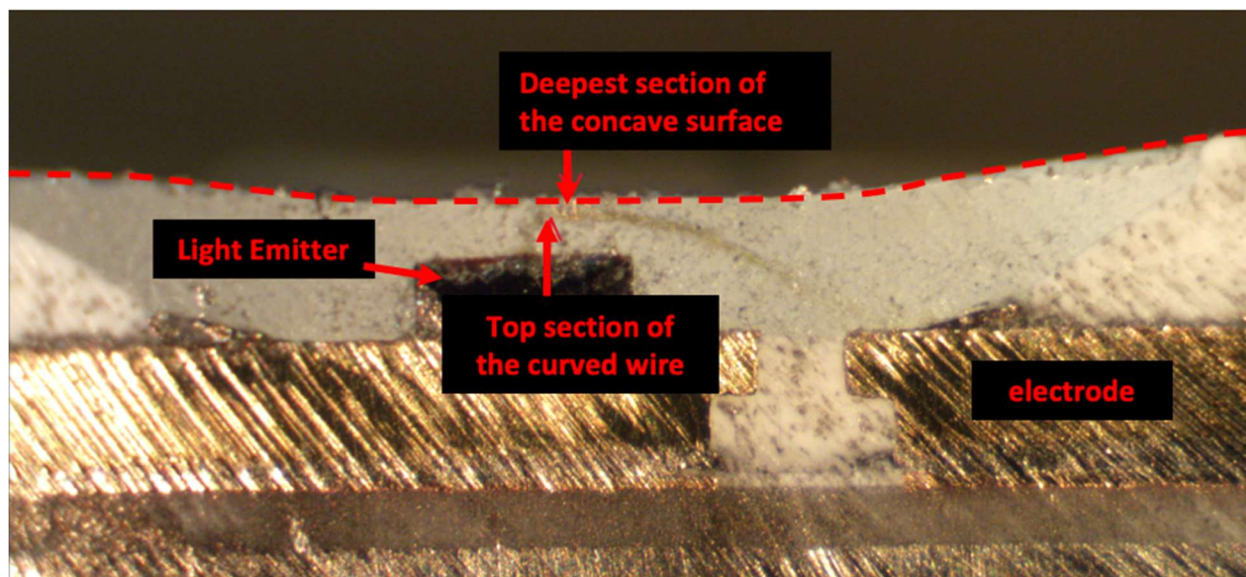


As another example, shown below is an image of the cross-sectioned LED chip from the GE Tube Light showing the concave surface facing the surface of the light emitter:



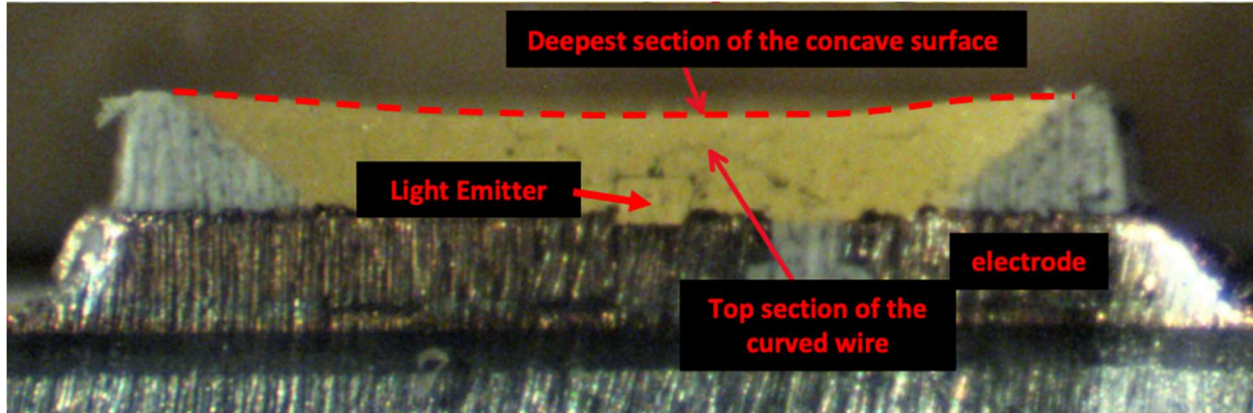
1(f): the light emitter and the electrode being connected via a wire that is curved in such a way that a top section of the curved wire substantially coincides with a deepest section of the concave surface,— The GE Grow Light and GE Tube light each includes a light emitter and the electrode being connected via a wire that is curved in such a way that a top section of the curved wire substantially coincides with a deepest section of the concave surface.

For example, shown below is a cross sectional view of the LED from the GE Grow Light with the light emitter and the electrode connected via a wire that is curved in such a way that a top section of the curved wire substantially coincides with a deepest section of the concave surface:



As another example, shown below is a cross sectional view of the LED from the GE Tube Light with the light emitter and the electrode connected via a wire that is curved in such a way that a top section of the curved wire substantially coincides with a deepest section of the

concave surface:



150. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '959 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '959 Patent under 35 U.S.C. § 271(c).

151. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '959 Patent while being on notice of (or willfully blind to) the '959 Patent. For instance, Defendants have supplied and continue to supply the '959 Accused Products to customers (*e.g.*, end users and/or distributors of the '959 Accused Products) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '959 Patent.

152. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '959 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the '959 Accused Products and uses of the '959 Accused Products. *See, e.g.*, <https://www.lowes.com/pd/GE-4-75-in-1-Light-White-9-Watt-Br30-LED-Grow-Light/1001062844>; <https://www.lowes.com/pd/GE-15-Watt-EQ-48-in-Daylight-Linear-LED-Tube-Light-Bulb-2-Pack/1002643054>.

153. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '959 Patent. For instance, Defendants know (and/or have known) of the existence of the '959 Patent or at least should have known of the existence of the '959 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '959 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '959 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '959 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '959 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '959 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

154. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '959 Patent by offering for sale, selling, and/or importing one or more components in connection with the '959 Accused Products that contribute to the direct infringement of the '959 Patent by customers of the '959 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '959 Patent or were willfully blind to its existence since at least as early as the filing and/or service of this Complaint. Further, Defendants offer for sale, sell, and/or import one or more components in connection with the '959 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '959 Patent. Defendants have supplied (and/or

continues to supply) the '959 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '959 Patent by using the Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

155. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '959 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

156. Additional allegations regarding Defendants' knowledge of the '959 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

157. Defendants' infringement of the '959 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

158. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '959 Patent.

159. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants' infringement of the '959 Patent, including, without limitation, a reasonable royalty.

COUNT VIII: INFRINGEMENT OF U.S. PATENT NO. 8,441,022

160. LedComm incorporates by reference and re-alleges paragraphs 62-68 of the Complaint as if fully set forth herein.

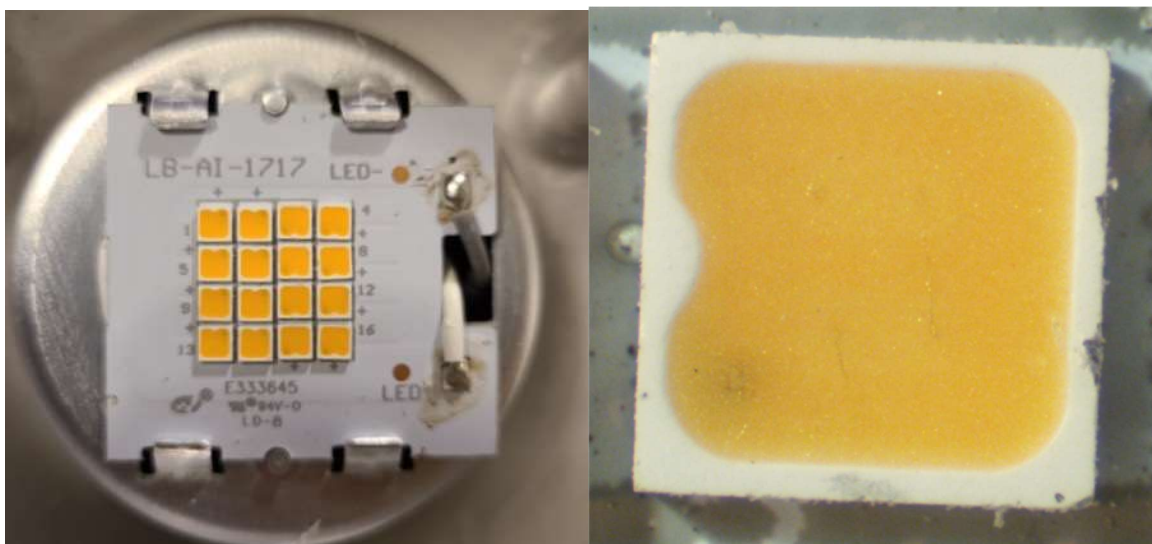
161. Defendants have infringed and are infringing, either literally or under the doctrine of equivalents, the '022 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the GE Lighting products (*e.g.*, the GE Floodlight; GE

Life Bulb; GE Sleep Bulb; and GE Smart Color Bulb, among other substantially similar products) (collectively, the “’022 Accused Products”).

162. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the ‘022 Patent in connection with two of the ’022 Accused Products (*e.g.*, GE Floodlight and GE Sleep Bulb). This description is based on publicly available information. LedComm reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

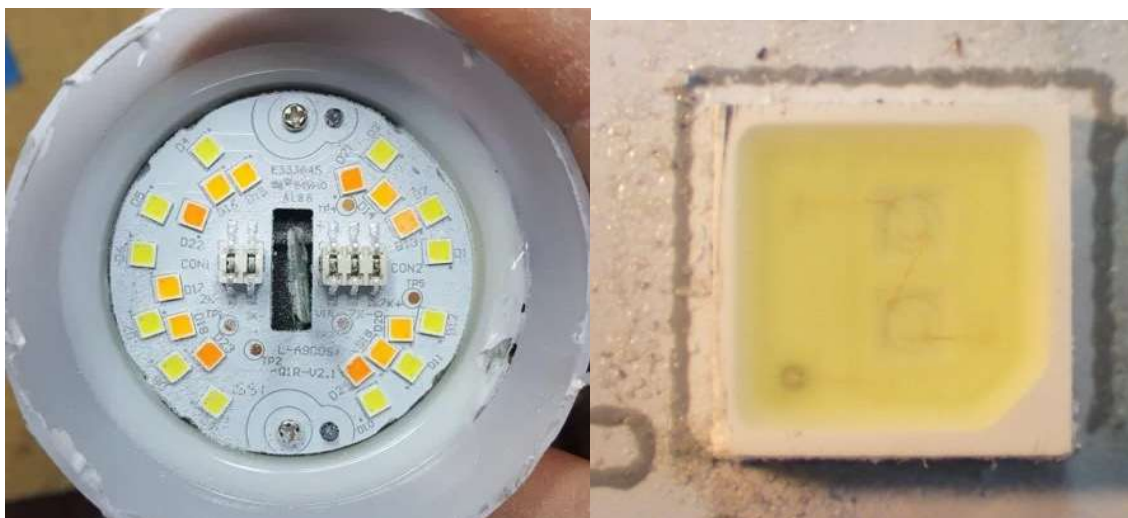
1(a): A semiconductor light-emitting device, for emitting light to an outside, the semiconductor light-emitting device being mountable on a substrate, the semiconductor light-emitting device comprising:— Defendants, directly and/or indirectly, make, use, sell, and/or offer to sell in the United States, and/or import into the United States, semiconductor light emitting devices that are covered by claim 1 of the ‘022 Patent.

As one non-limiting example, the GE Floodlight comprises a “semiconductor light emitting device, for emitting light to an outside,” as recited in claim 1. *See, e.g.*, <https://www.lowes.com/pd/GE-Basic-90-Watt-EQ-LED-Par38-Warm-White-Flood-Light-Bulb-6-Pack/1000444153>. For instance, shown below are top down views of an example phosphor LED from the GE Floodlight:



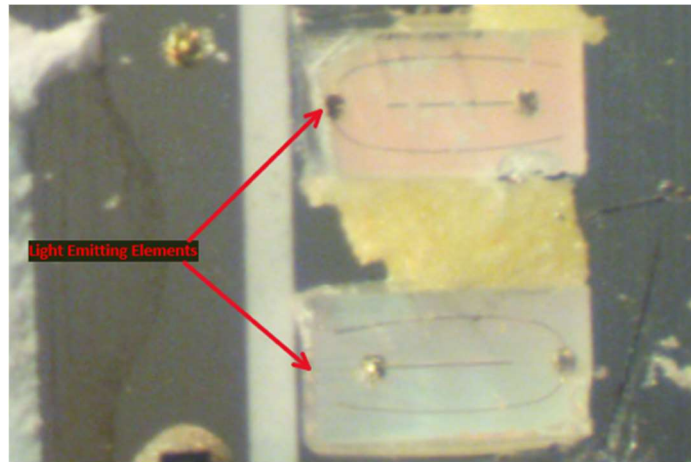
As another non-limiting example, the GE Sleep Bulb comprises a “semiconductor light emitting device, for emitting light to an outside,” as recited in claim 1. *See, e.g.,* <https://www.lowes.com/pd/GE-C-by-GE-60-Watt-EQ-A19-Soft-White-Dimmable-Smart-LED-Light-Bulb/1000616257>.

For instance, shown are top-down views of an example phosphor LED from the GE Sleep Bulb:

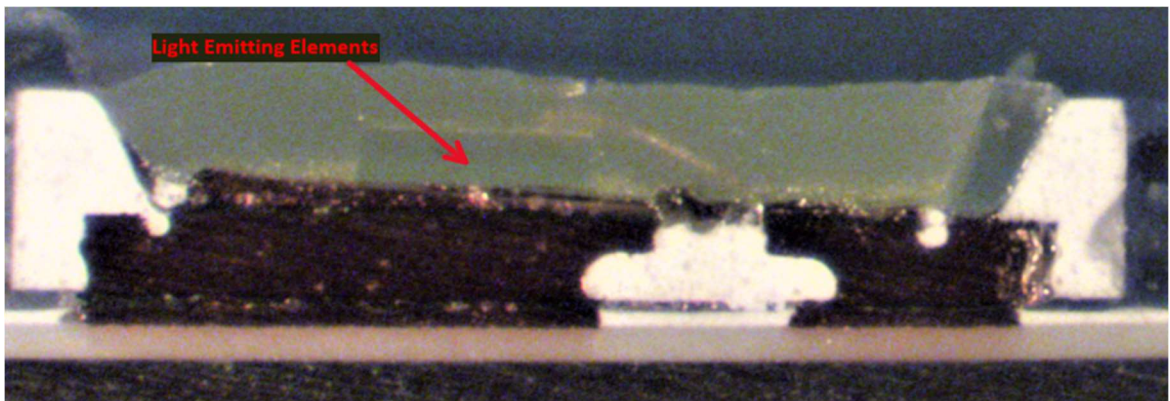


1(b): at least one semiconductor light-emitting element;— GE Floodlight and GE Sleep Bulb each comprise at least one semiconductor light-emitting element.

For example, a top-down view of a phosphor LED from a GE Floodlight is shown below with two semiconductor light emitting element identified:

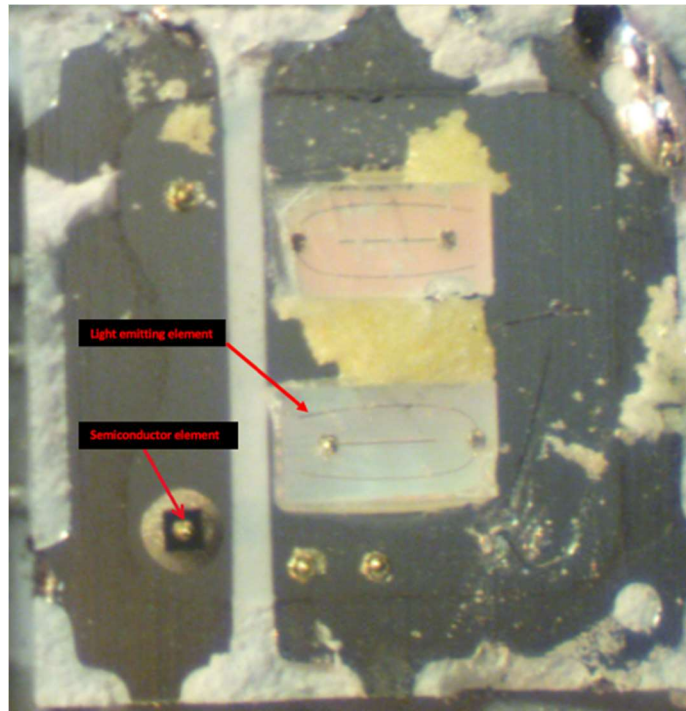


As another example, a cross section of an LED from a GE Sleep Bulb was taken, and a resulting cross-sectional view is shown below with a semiconductor light emitting element identified:

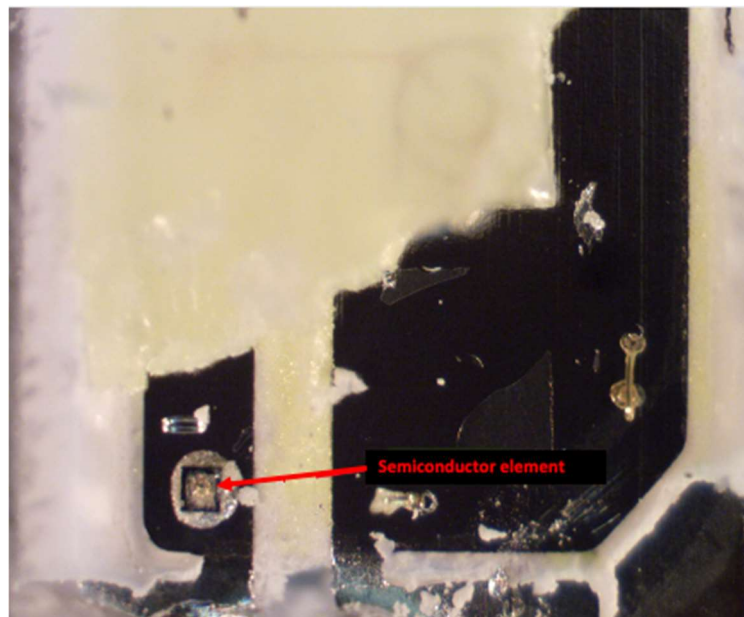


1(c): a semiconductor element; — The GE Floodlight and GE Sleep Bulb each comprise a semiconductor element.

For example, shown below is a top-down view of the phosphor LED from the GE Floodlight with the semiconductor element identified:



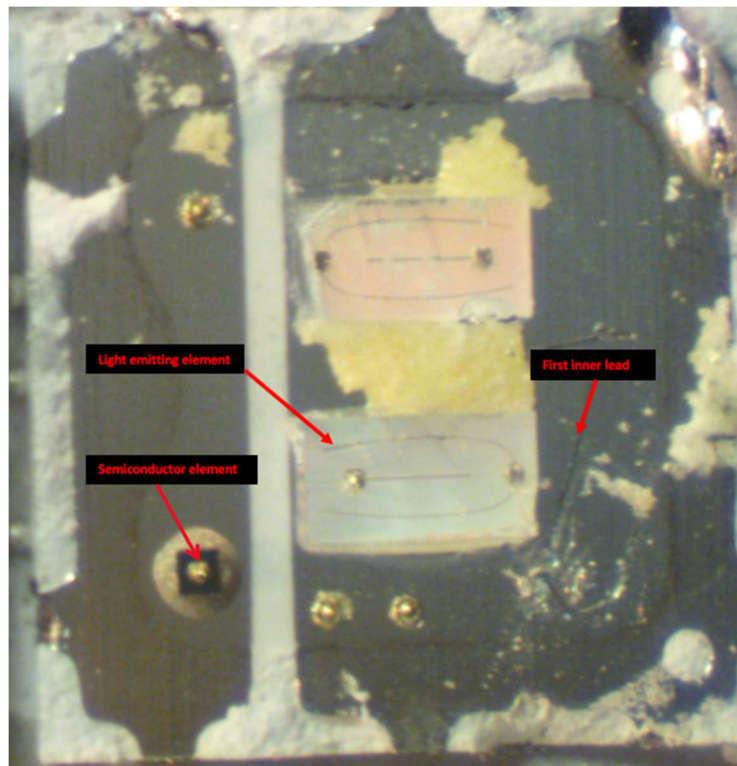
As another example, shown below is a top-down view of the GE Sleep Bulb with the semiconductor element identified:

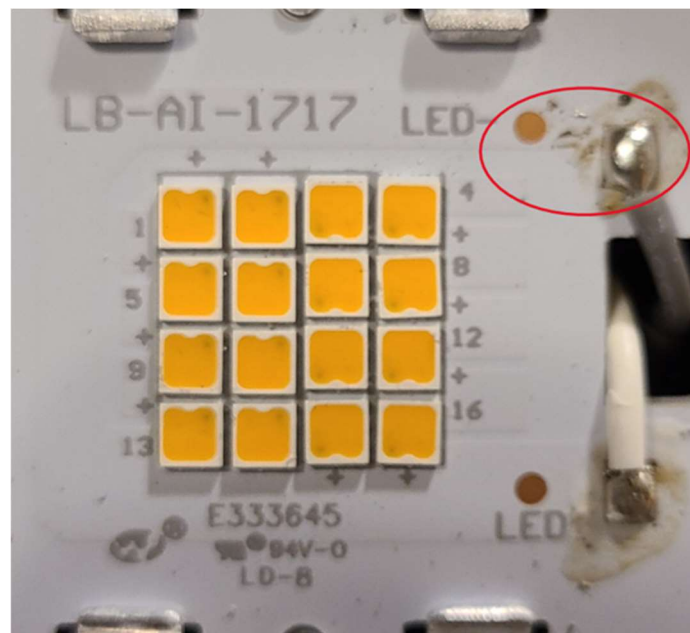
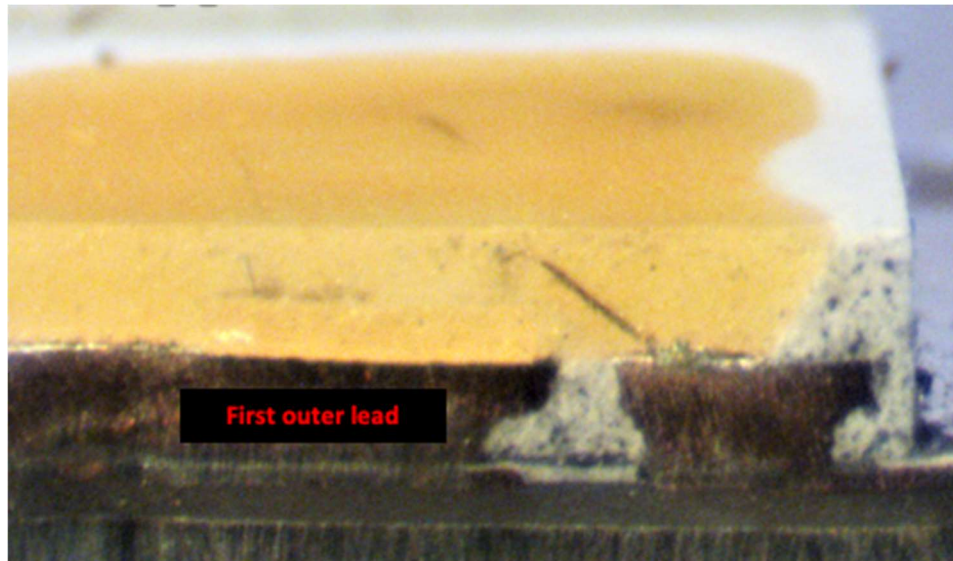


1(d): a first lead frame including a first inner lead and a first outer lead connected to each other, the first inner lead having a surface on which the at least one semiconductor light-emitting element is provided, the first outer lead being connectable to a corresponding electrode

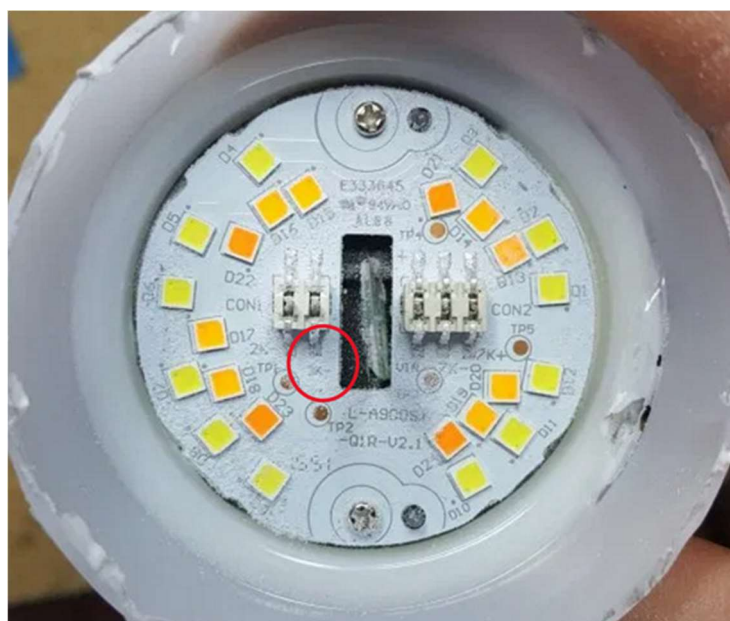
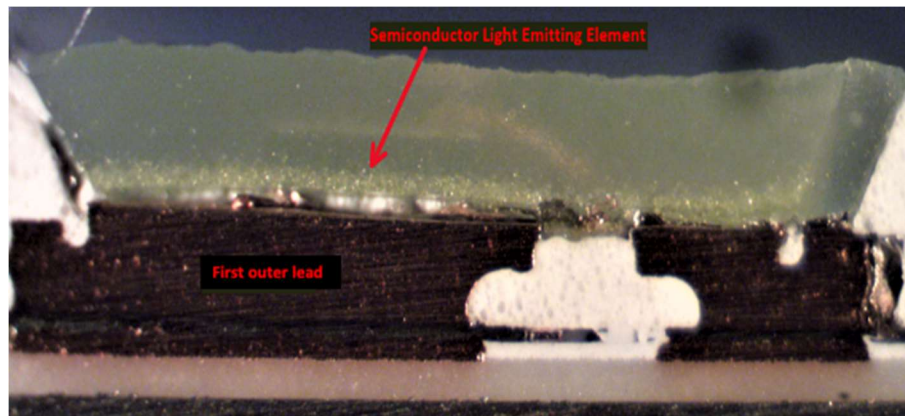
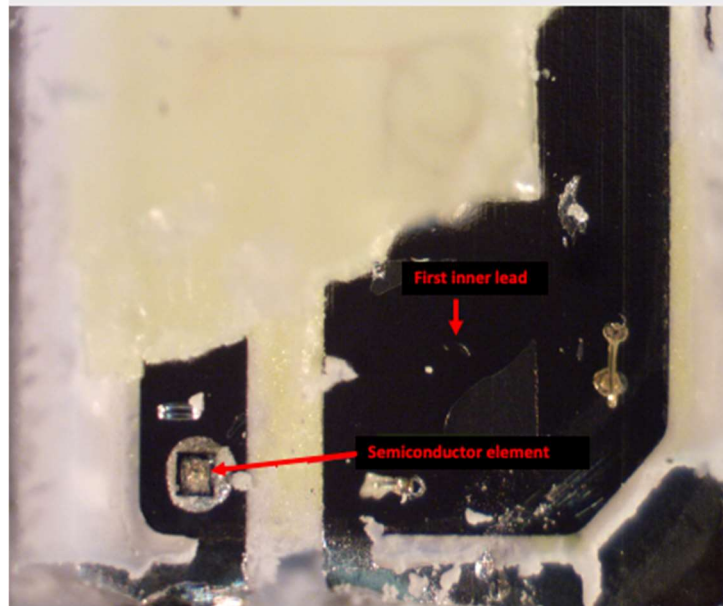
of the substrate; and— The GE Floodlight and GE Sleep Bulb each comprise a first lead frame including a first inner lead and a first outer lead connected to each other, the first inner lead having a surface on which the at least one semiconductor light-emitting element is provided, the first outer lead being connectable to a corresponding electrode of the substrate.

For example, shown below are views of the phosphor LED from the GE Floodlight showing a first inner lead having a surface on which a semiconductor light emitting element is provided, and a first outer lead that is connectable to a corresponding electrode of the substrate:



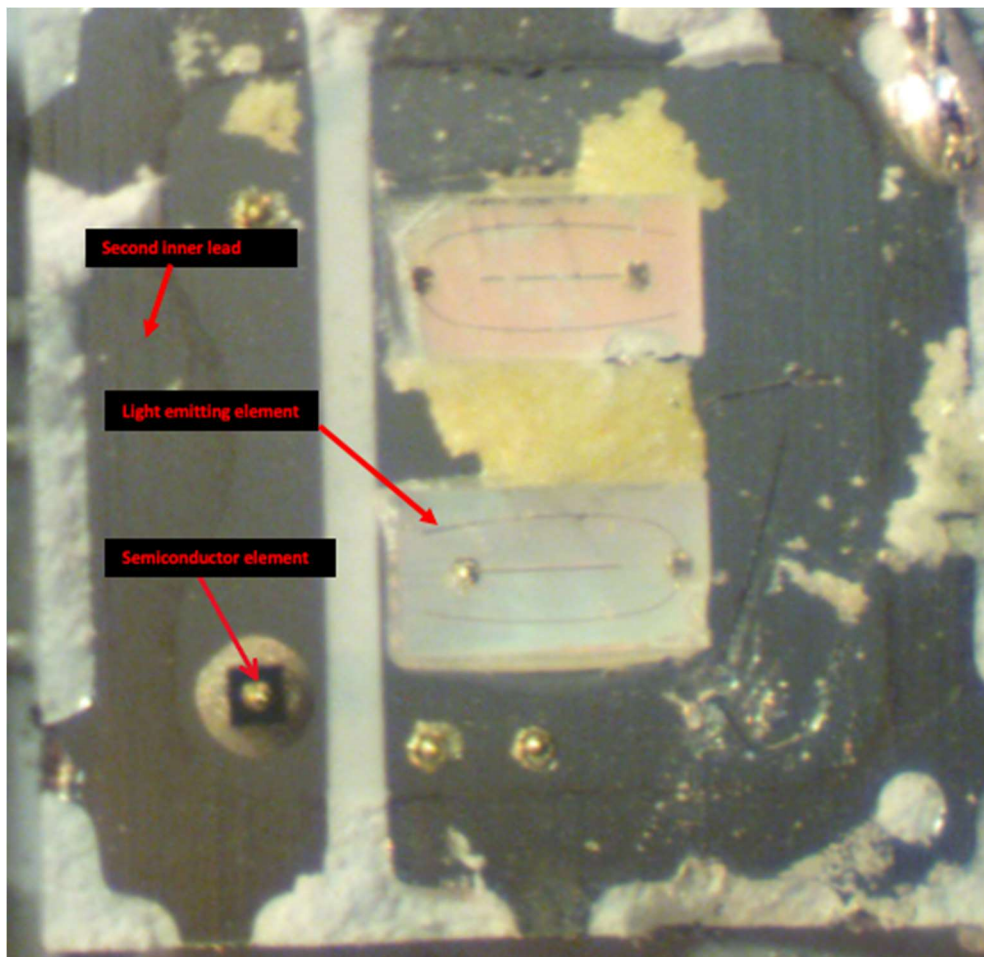


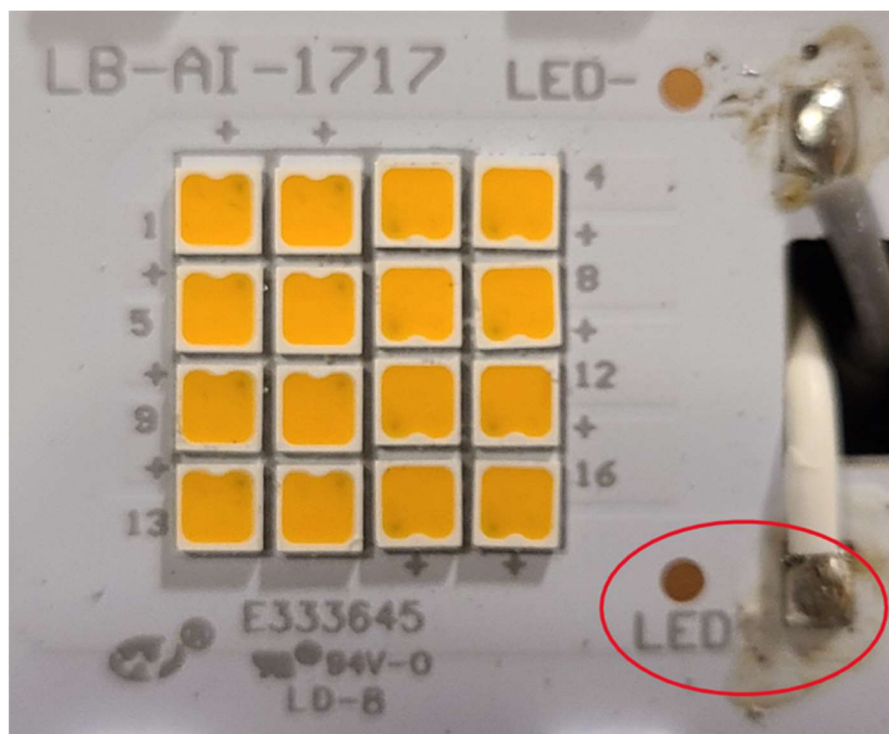
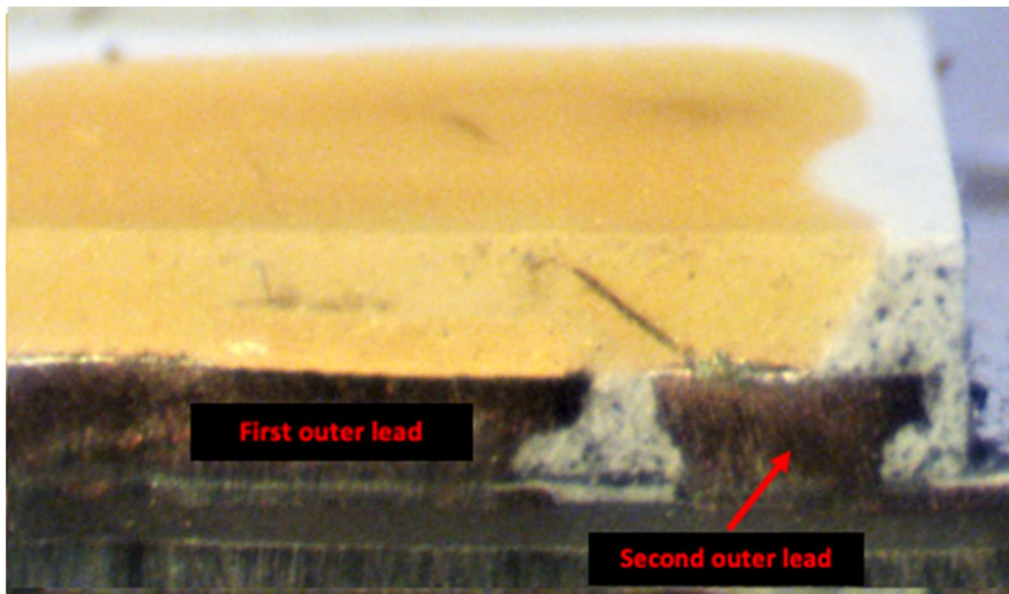
As another example, shown below are views of the phosphor LED from the GE Sleep Bulb showing the first inner lead having a surface on which a semiconductor light emitting element is provided, and the first outer lead that is connectable to a corresponding electrode of the substrate:



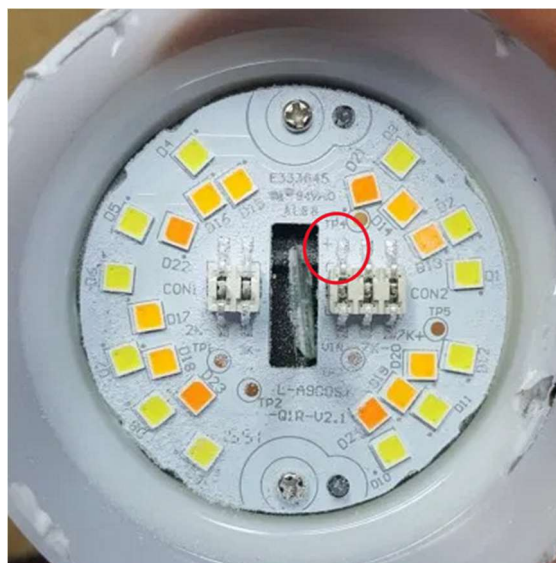
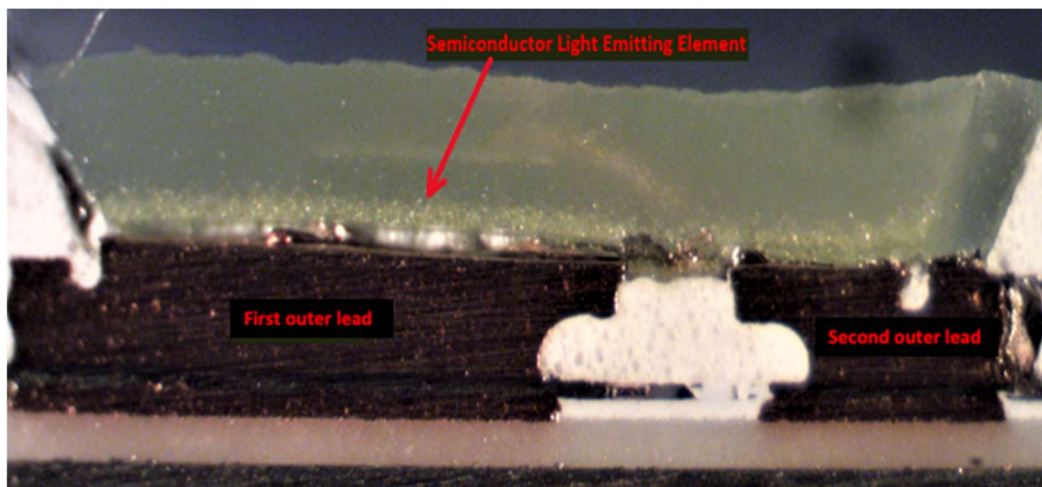
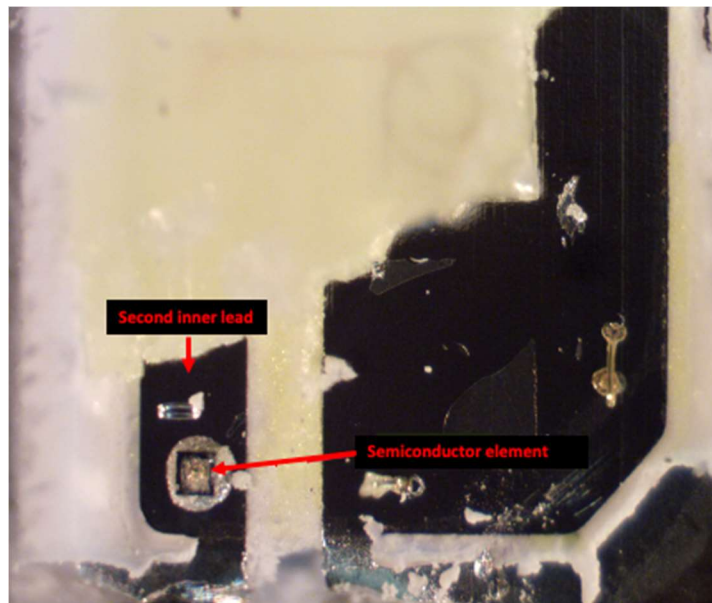
1(e): a second lead frame including a second inner lead and a second outer lead connected to each other, the second inner lead having a surface on which the semiconductor element is provided, the second outer lead being connectable to a corresponding electrode of the substrate; and— The GE Floodlight and GE Sleep Bulb each comprise a second lead frame including a second inner lead and a second outer lead connected to each other, the second inner lead having a surface on which the semiconductor element is provided, the second outer lead being connectable to a corresponding electrode of the substrate.

For example, shown below are views of the phosphor LED from the GE Floodlight showing the second inner lead having a surface on which the semiconductor element is provided, and the second outer lead that is connectable to a corresponding electrode of the substrate:





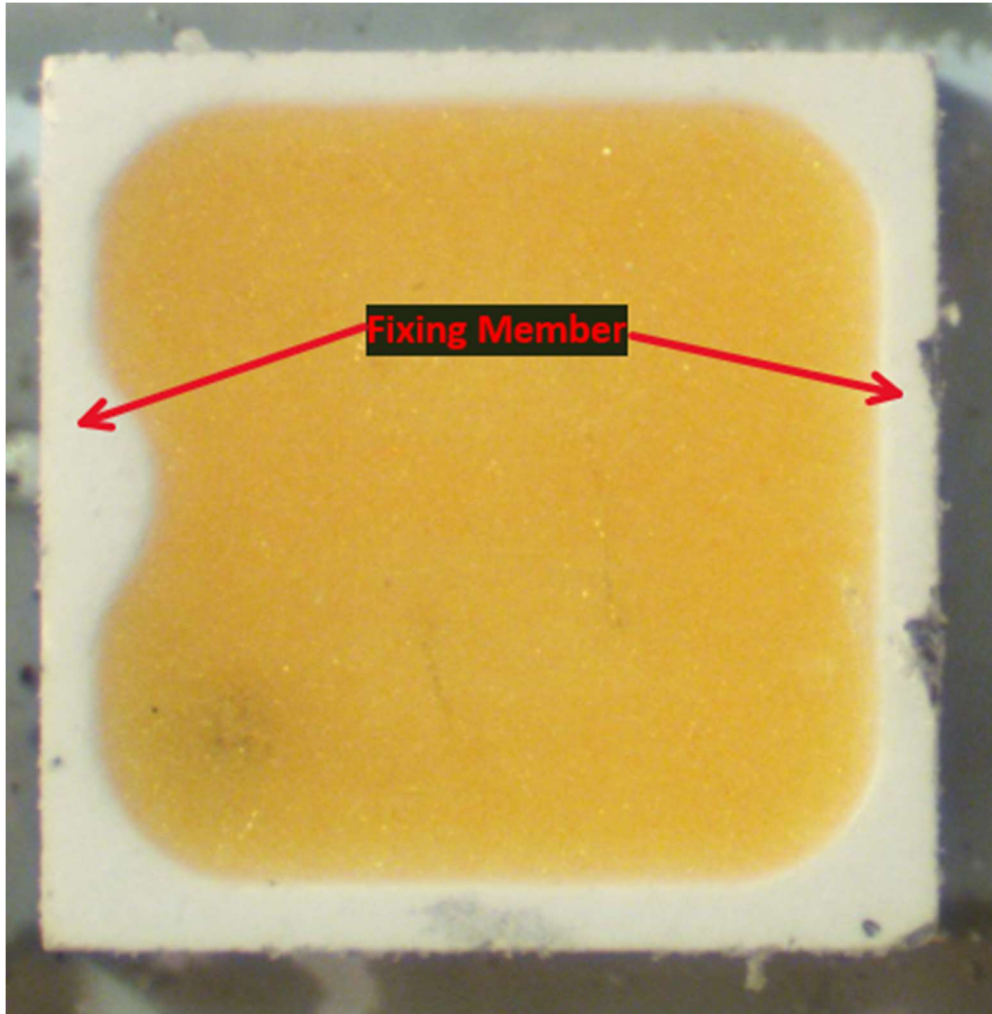
As another example, shown below are views of the phosphor LED from the GE Sleep Bulb showing the second inner lead having a surface on which the semiconductor element is provided, and the second outer lead that is connectable to a corresponding electrode of the substrate:



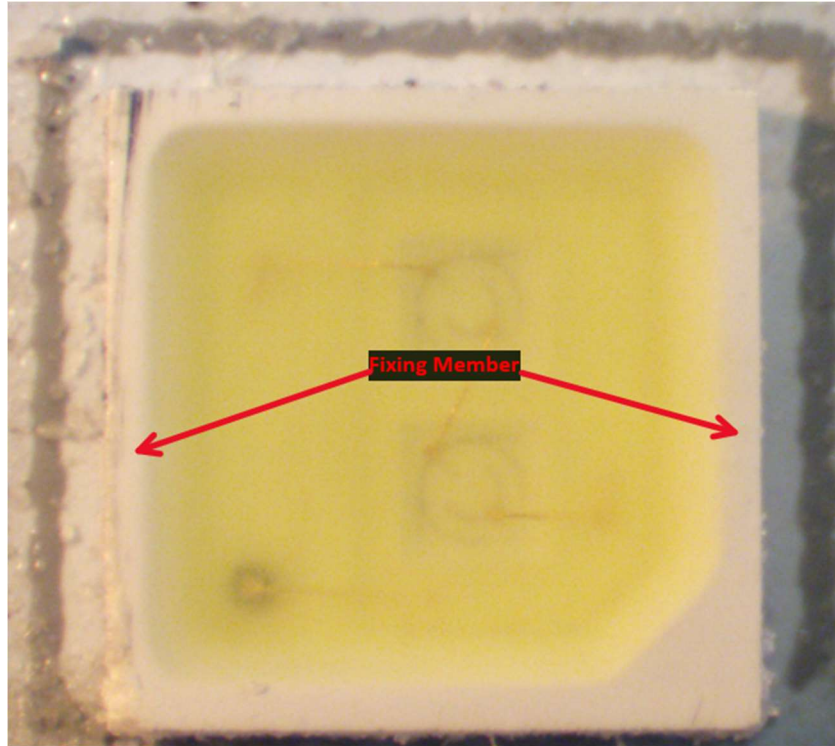
1(f): a fixing member for fixing the first lead frame and the second lead frame thereto,

— The GE Floodlight and GE Sleep Bulb each comprise a fixing member for fixing the first lead frame and the second lead frame thereto.

For example, shown below is a top-down view of the phosphor LED from the GE Floodlight with the fixing member for fixing the first lead frame and second lead frame identified:

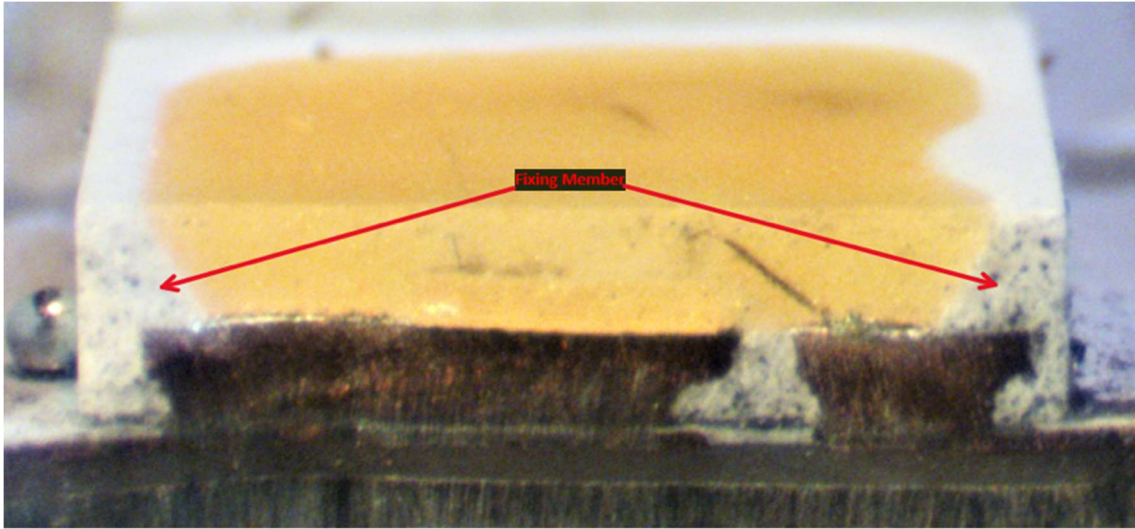


As another example, shown below is a top-down view of the phosphor LED from the GE Sleep Bulb with the fixing member for fixing the first lead frame and second lead frame identified:

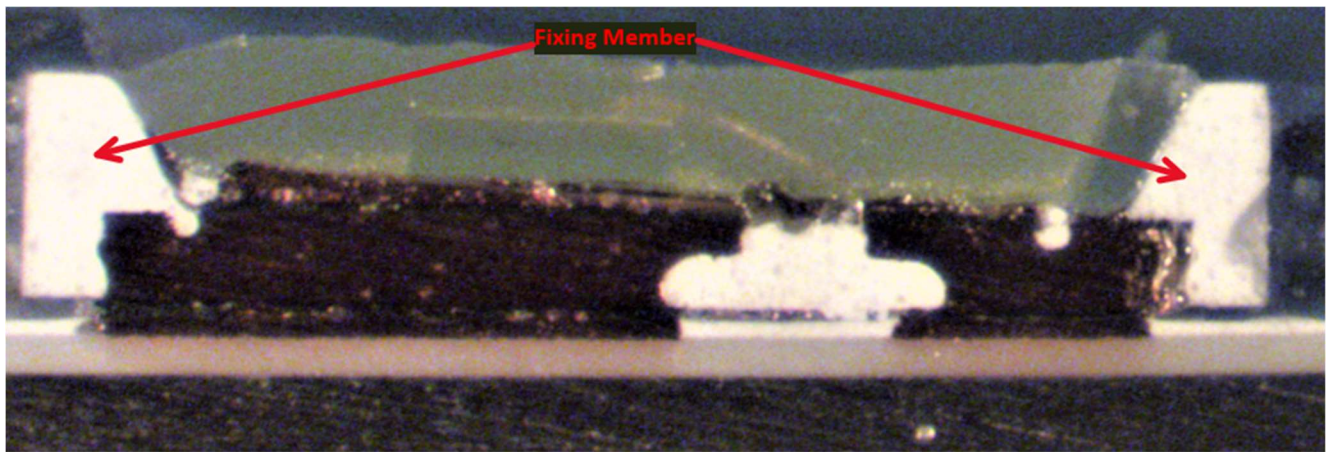


1(g): both the first outer lead connected to the first inner lead penetrating the fixing member and the second outer lead connected to the second inner lead penetrating the fixing member being provided on an outer wall surface of the fixing member, — In the GE Floodlight and GE Sleep Bulb, both the first outer lead connected to the first inner lead penetrating the fixing member and the second outer lead connected to the second inner lead penetrating the fixing member are provided on an outer wall surface of the fixing member,.

For example, shown below is a cross-sectional view of the phosphor LED from the GE Floodlight showing both the first outer lead and the second outer lead provided on an outer wall surface of the fixing member:

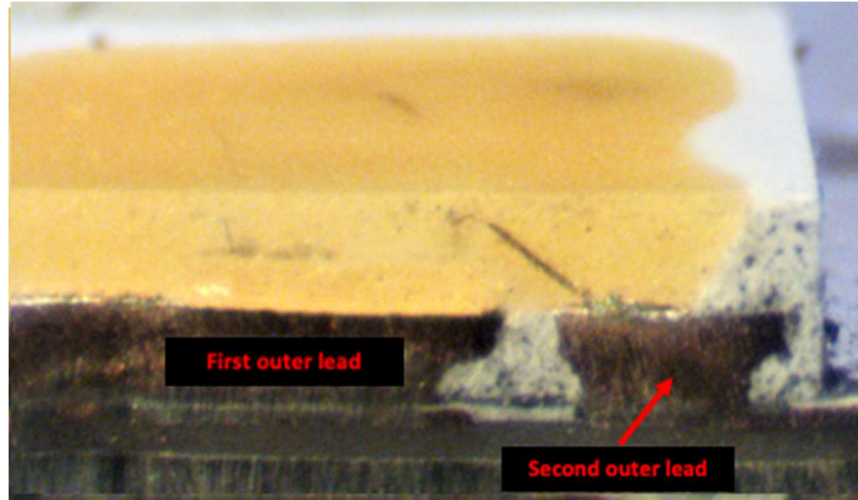


As another example, shown below is a cross-sectional view of the phosphor LED from the GE Sleep Bulb showing both the first outer lead and the second outer lead provided on an outer wall surface of the fixing member:

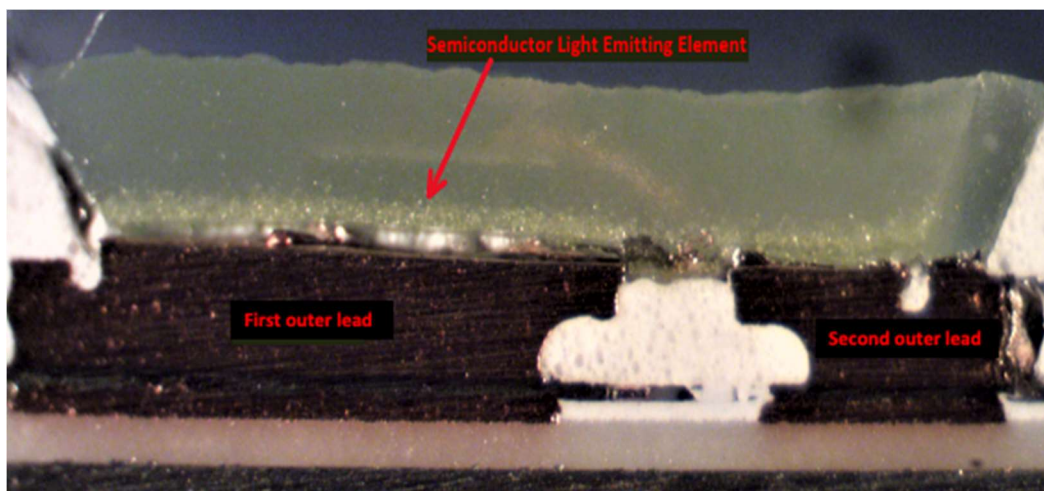


1(h): the first outer lead having a surface area greater than that of the second outer lead. — In the GE Floodlight and GE Sleep Bulb, the first outer lead has a surface area greater than that of the second outer lead.

For example, shown below is a cross-sectional view of the phosphor LED from the GE Floodlight showing the first outer lead having a surface area greater than that of the second outer lead:

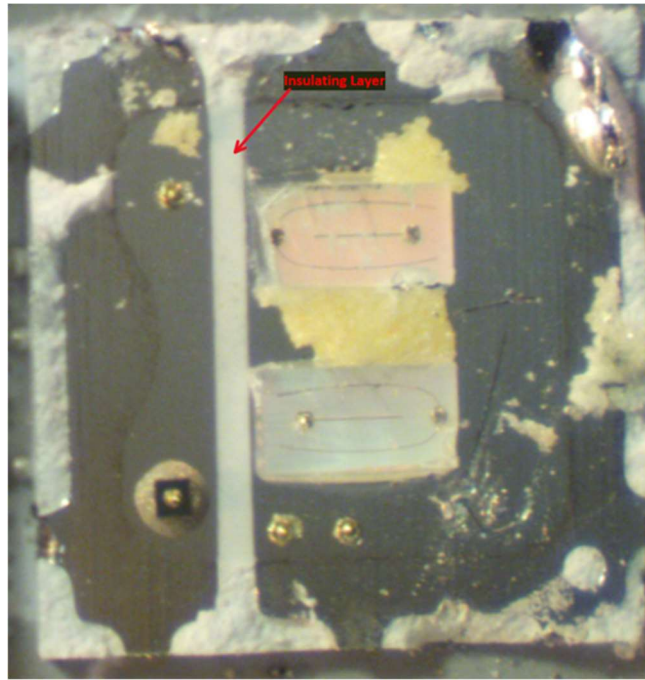


As another example, shown below is a cross-sectional view of the phosphor LED from the GE Sleep Bulb showing the first outer lead having a surface area greater than that of the second outer lead:



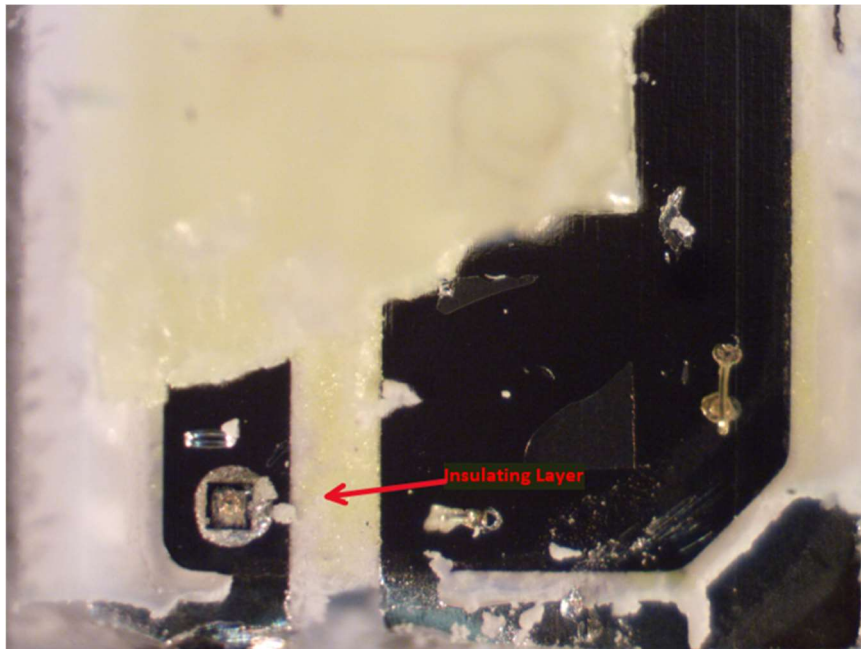
1(i): the device further comprising an insulating layer formed between the first inner lead and the second inner lead so as to be oblique to one side of the semiconductor light-emitting device, the insulating layer being made of a material identical to that for the fixing member. — The GE Floodlight and GE Sleep Bulb each comprise an insulating layer formed between the first inner lead and the second inner lead so as to be oblique to one side of the semiconductor light-emitting device, the insulating layer being made of a material identical to

that for the fixing member. For example, shown below is a top-down view of the phosphor LED from the GE Floodlight with an insulating layer formed between the first inner lead and the second inner lead so as to be oblique to one side of the semiconductor light-emitting device identified:



As shown, the insulating layer is made of a material identical to that for the fixing member shown in the claim elements above.

As another example, shown below is a top-down view of the phosphor LED from the GE Sleep Bulb with an insulating layer formed between the first inner lead and the second inner lead so as to be oblique to one side of the semiconductor light-emitting device identified:



As shown, the insulating layer is made of a material identical to that for the fixing member shown in the claim elements above.

163. Additionally, Defendants have been and/or currently are an active inducer of infringement of the '022 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '022 Patent under 35 U.S.C. § 271(c).

164. Indeed, Defendants have been and/or currently are intentionally causing, urging, and/or encouraging customers to directly infringe one or more claims of the '022 Patent while being on notice of (or willfully blind to) the '022 Patent. For instance, Defendants have supplied and continue to supply the '022 Accused Products to customers (*e.g.*, end users and/or distributors of the '022 Accused Products) while knowing that use of these products in their intended manner will directly infringe one or more claims of the '022 Patent.

165. Defendants have been and/or currently are knowingly and intentionally encouraging and aiding customers to engage in such direct infringement of the '022 Patent. As one example, Defendants promote, advertise, and instruct customers or potential customers about the

Accused Products and uses of the Accused Products. *See, e.g.,* <https://www.lowes.com/pd/GE-Basic-90-Watt-EQ-LED-Par38-Warm-White-Flood-Light-Bulb-6-Pack/1000444153>; <https://www.lowes.com/pd/GE-C-by-GE-60-Watt-EQ-A19-Soft-White-Dimmable-Smart-LED-Light-Bulb/1000616257>.

166. Defendants know (and/or have known) that such encouraging and aiding does (and/or would) result in their customers directly infringing the '022 Patent. For instance, Defendants know (and/or have known) of the existence of the '022 Patent or at least should have known of the existence of the '022 Patent but were willfully blind to its existence. Indeed, Defendants have had actual knowledge of the '022 Patent since at least as early as the filing and/or service of the Complaint. And, as a result of their knowledge of the '022 Patent (and/or as a direct and probable consequence of their willful blindness to this fact), Defendants specifically intend (and/or have intended) that their encouraging and aiding does (and/or would) result in direct infringement of the '022 Patent by Defendants' customers. On information and belief, Defendants specifically intend (and/or have intended) that their actions will (and/or would) result in direct infringement of one or more claims of the '022 Patent and/or subjectively believe (and/or have believed) that their actions will (and/or would) result in infringement of the '022 Patent but have taken (and/or took) deliberate actions to avoid learning of those facts.

167. Additionally, Defendants have been and/or currently are contributorily infringing one or more claims of the '022 Patent by offering for sale, selling, and/or importing one or more components in connection with the '022 Accused Products that contribute to the direct infringement of the '022 Patent by customers of the '022 Accused Products. In particular, as set forth above, Defendants have had actual knowledge of the '022 Patent or were willfully blind to its existence since at least as early as the filing and/or service of this Complaint. Further,

Defendants offer for sale, sell, and/or import one or more components in connection with the '022 Accused Products that are not staple articles of commerce suitable for substantial noninfringing use, and Defendants know (or should know) that such component(s) were especially made or especially adapted for use in infringement of the '022 Patent. Defendants have supplied (and/or continues to supply) the '022 Accused Products that comprise such component(s) to customers, who then directly infringe one or more claims of the '022 Patent by using the Accused Products in their intended manner (*e.g.*, pursuant to instructions provided by Defendants).

168. At least as early as the filing and/or service of this Complaint, Defendants' infringement of the '022 Patent was and continues to be willful and deliberate, thereby entitling LedComm to enhanced damages.

169. Additional allegations regarding Defendants' knowledge of the '022 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

170. Defendants' infringement of the '022 Patent is exceptional and entitles LedComm to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

171. LedComm is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '022 Patent.

172. LedComm is entitled to recover from Defendants all damages that LedComm has sustained as a result of Defendants' infringement of the '022 Patent, including, without limitation, a reasonable royalty.

JURY DEMAND

LedComm hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff LedComm Communications, LLC respectfully requests:

- A. That Judgment be entered that Defendants have infringed at least one or more claims of the Patents-in-Suit, directly and/or indirectly, literally and/or under the doctrine of equivalents;
- B. An award of damages sufficient to compensate LedComm for Defendants' infringement under 35 U.S.C. § 284, including an enhancement of damages on account of Defendants' willful infringement;
- C. That the case be found exceptional under 35 U.S.C. § 285 and that LedComm be awarded its reasonable attorneys' fees;
- D. Costs and expenses in this action;
- E. An award of prejudgment and post-judgment interest; and
- F. Such other and further relief as the Court may deem just and proper.

Respectfully submitted,

Dated: August 11, 2020

THE MORT LAW FIRM, PLLC
and
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